

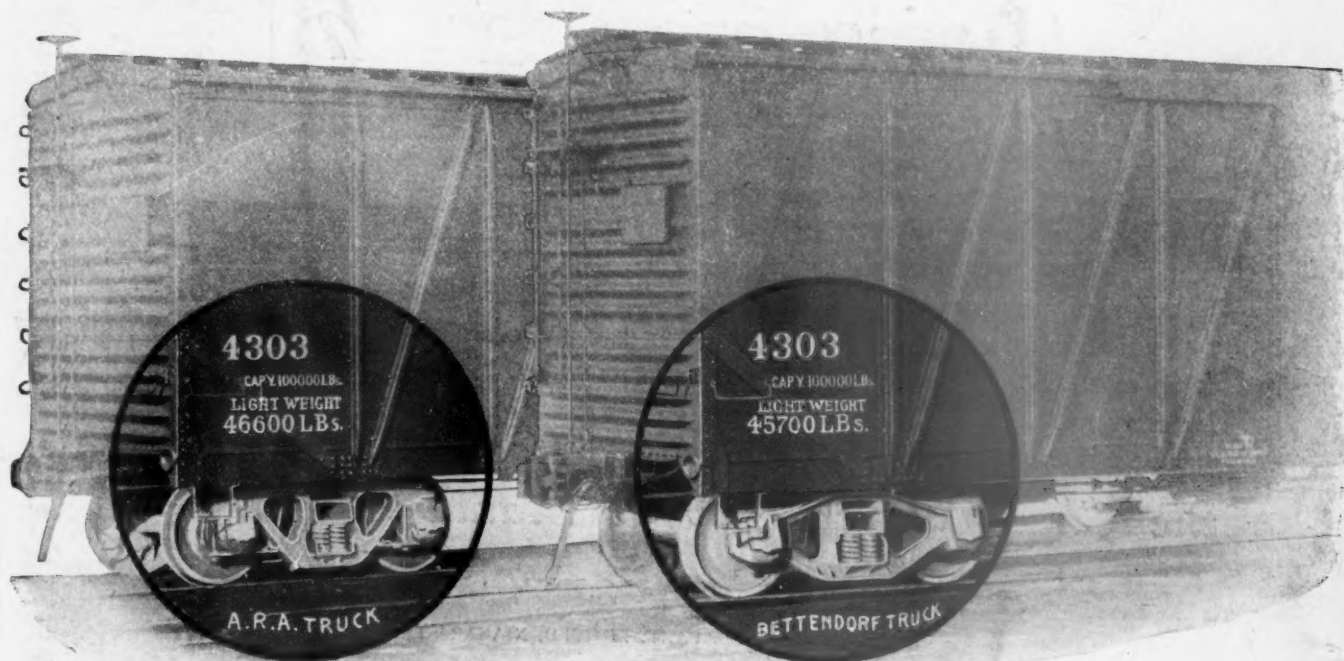
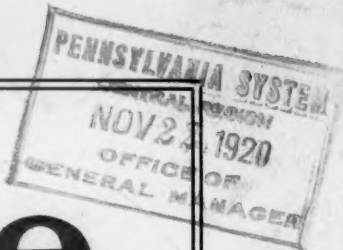
Railway Age

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For Every Railway Purpose

EDITORIAL

Railway Age

EDITORIAL

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At the moment when every business man is hesitating, does it not afford the railroads an unparalleled opportunity to

Time to Take the Lead

assume the leading role, not only as an institution for providing transportation, but as the nation's most progressive business enterprise? The railroads must realize that they have come into a new estate, that public mistrust has changed to confidence. It is of the utmost importance that the constructive legislation and liberal rate advances be in no sense abused. That the railroads must eventually put their equipment and organization in condition to deal efficiently with the most exacting public requirements is obvious. Railroad executives should have the foresight to comprehend a broad plan for physical and organic rehabilitation and the courage to pursue this policy without faltering. It may be that a concerted pause in active development will result in lower costs for the basic materials on which this development is dependent but the need for new rail, for better locomotives and for improved terminal facilities is so evident that it would be fatal to postpone a constructive program until every other business enterprise is again expanding. On what grounds can the railroads explain their failure to have sufficient cars, efficient locomotives and adequate terminals if in the course of a few years it appears that they failed to persevere in a comprehensive program for these improvements? Business will not hesitate forever on the verge of readjustment. Now is the time for the railroads to plan and to build for the future.

The opinion has been expressed in these columns that machinery for railroad offices has proved itself as desirable and

Choosing Office Equipment

as necessary as machinery in the railway shop. Office machinery saves labor, it promotes accuracy, it assists speed, and in many departments it facilitates matters to such an extent that work is now being done that it was almost impossible to do satisfactorily under the old methods. It must be borne in mind, however, that so much progress has been made in office machine equipment that these mechanical aids should not be purchased indiscriminately any more than machine tools for the shops can be bought in that way. There are now available for use a wide variety of adding, calculating, tabulating machines, etc. Some of them will be found most valuable for the accounting departments while others will be found less useful for these departments but almost indispensable for the operating, engineering and mechanical departments. This thought is suggested for the reason that it may not be apparent to the prospective user, or possibly even to the seller of the equipment. It is evident that a device to be used by employees whose principal work is figuring, as is typified by the work in the auditor's office, is not so likely to do equally efficient work in the hands of an employee with whom figuring is incidental, as possibly in the mechanical department. On the other hand, a device which has more aids to the operator is likely to prove quite satisfactory in the latter department, whereas the presence of these aids would be a handicap to speed in the hands of a thoroughly trained worker in the auditor's office. Mechanical equipment for offices has developed so rapidly and the devices are now so varied in char-

acter that these things must be kept in mind so that the best devices will be secured and their use will be properly systematized to secure the large results that are obtainable under the right conditions, as compared to the "old" and, in some railway offices, "present" methods.

The caring for a railway's cash is a most responsible function. On another page of this issue we report the meeting of

Railway Financial Officers

the Society of Railway Financial Officers held at Richmond, Va., last week. This organization is composed of those railway officers who bear in the main the title of treasurer. As befits the duties of these officers, their organization has a place among the many railway associations considerably beyond what might be expected from the comparatively small membership of 215. The association this year, as in former years, did not confine its discussions merely to the questions arising out of the handling of cash or credits. The program evidenced the fact that the treasurer has many duties to perform over and above that work. The treasury department on the one hand deals with the employee through the pay car and the collection of funds taken by the agents, and on the other hand with the public, because of the necessity of making rules as to proper payment of freight bills, etc. That the treasurers are looking at the broad aspects of their functions is shown possibly in no better way than in the paper and discussion on selling stock to employees. The meeting was as much interested in the usefulness of the plan from the standpoint of its securing the interest and loyalty of the man who purchased stock as it was in the actual details of working out the plan once it may be put into effect. The interest in the ways in which the treasurer may make friends for the railways on the part of the public was also equally noteworthy.

A leading authority on railroad operation recently declared that a single locomotive terminal on a certain important rail-

The Weakest Link

road is the factor which limits the operating capacity of that railroad. It will be conceded that the locomotive terminal constitutes the weakest link in the chain of operations on many railroads and on more than one railroad the facilities for maintaining and expediting the movement of locomotives in and out of the terminals are so totally inadequate that they might be more aptly referred to as the "missing link." It may not be fair to say that the railroads have permitted the development of locomotive terminals to drag behind almost every other facility, but it is certain that in no other direction will a relatively small amount of money go as far toward improving the operation of the railroad as in the improvement of locomotive terminals. But locomotive terminals cannot be built over night, nor is terminal development so simple a matter as a contract for additional cars or even a new order of locomotives. Once the site is selected, the railroad is forever committed to a location where it may soon become cramped for room. If a ninety-foot turntable is decided upon, the terminal will become inadequate the moment it is necessary to turn a longer locomotive. Every railroad should have outlined a comprehensive plan for the rehabilitation

of every locomotive terminal that will anticipate so far as possible the maximum requirements for at least fifty years to come. A committee representing the transportation, the mechanical and the engineering departments might well be appointed to study the situation on each railroad and develop such a plan. When this is accomplished, all construction should proceed in accordance with the plan, leaving the more ambitious features for later development. Where the projected terminal represents a departure from the former site and involves entirely new equipment it would not appear impractical to borrow the funds for this investment under a locomotive terminal equipment loan.

Some years ago there was an article in one of the architectural publications dealing with the beautiful passenger stations on one of the eastern railroads. The architectural beauties of the stations were lauded to the skies with the reservation in the case of one of them to the effect that its beauties were entirely spoiled by its proximity to a freight yard full of dirty red box cars. If the writer were writing today and could see the color of most of the cars that are now in that yard, what would he say? Speaking in similar vein, it would seem a safe observation that a railway trip today must stir conflicting emotions in the heart of any paint manufacturer or paint salesman. The paint concerns have united in the use in their advertising of the slogan "Save the surface and you save all." It must seem discouraging to these men to see what little apparent effect their campaign has had on the railroads as evidenced to the traveler, at least, by the predominance of a brown rusty shade as the ruling color for steel freight cars. It stands to reason that these cars are deteriorating much faster than they would if properly painted. From the standpoint of the traveling public, they are spoiling the scenery as much or more than the unartistic signboards that adorn the right of way in many places and to the railway passenger these cars look like the embodiment of inefficiency. The reason for the lack of paint on these cars is the same as the reason for the lack of all kinds of car repairs, principally the difficulty of returning cars to their owning roads where they may be put in proper condition, although probably the public does not know that. It is to be hoped that the proposed increase in the per diem will be adopted, for it will no doubt help considerably in getting the cars on their home lines. It is worth bearing in mind that a decrepit looking rusty car is certainly of little advertising value to the road whose initials it bears.

The ideal train movement—the salient feature in ideal railroad operation—is one wherein the train delivers its passengers or freight at destination on time, without damage to person or property and without waste of fuel or labor, or injury to any person or interest. We must keep this ideal constantly in mind.

Lost— Three Millions in Two Weeks

The other side of this picture is the fact that the final record of the train movements of the United States shows losses and damages of a million and a half dollars a week—\$78,000,000 a year. It is regrettable that it is necessary so often to look at the dark side of the picture; but such exercise is salutary if taken in the right spirit. Even the poet, who cultivates roses, has to spend a good deal of his time in exterminating weeds and in fighting other enemies. This average of 1½ millions a week is not precise, but it is truthful; and it is easy to keep in mind. Each officer or employee can readily compute an average for his own road or division. The second item in our estimate* is taken from a recent address by Harry J. Bell, noticed in another column.

Our deduction for payments not due to train operation is liberal; many would not deduct so much. Our third item also is inexact, but it is well within a reasonable limit. The Congress on Claim Prevention which is being held in Chicago as this is being written will deal with this item; and may, indeed, compel us to increase our memory-figure. The total freight losses this year are expected to aggregate 110 millions; but that figure includes losses from thefts and other causes not connected with train movement. The purpose of this paragraph is to warn against underestimating the losses when reading the annual train-accident record. The record for 1919, just published, shows gratifying diminution in the totals of killed and injured; a fact which every one will be glad to note. But we must note this other fact also. The time has at length arrived, however, when the railroad man does not have to bear all of the public criticism; automobile accidents are now killing people in this country at the rate of about eleven thousand a year; or one man, woman or child every half hour, for 16 hours each and every day!

Are We Getting the Right Kind of Engineers?

A CONFERENCE of engineers, educators and vocational experts was held in Chicago on November 12 to determine whether engineering education and the selection of engineering graduates for employment are being conducted in a manner designed to secure the best results. This is an important subject not only for the engineer himself but for the employer and grave questions have been raised as to the adequacy and correctness of present educational methods. While the railroads played only a minor part in this conference the problems considered are of vital importance to them and a close study of engineering education in relation to the employment of engineers on railroads may be fruitful in disclosing some of the reasons why the railroads have not found the engineer as useful as has been the case in many of the other industries.

The railroads have been employers of engineering graduates chiefly because they supplied a definite need for men trained to do certain things—to run a transit, figure stresses in a bridge or calculate earthwork quantities. Eventually, many men selected with these qualifications have developed executive ability to a degree that made them likely candidates for official positions, but too often they have been tried and found wanting. Similar experience has led some of the other employers to look for basic causes and question whether technical education has been conducted along proper lines. Some have contended that the education should be broader with the idea of training the mind to analytical thought rather than to developing skill in certain special lines. Others have pointed to a seeming lack of personnel activity designed to direct the student in a line suited to his possibilities and to provide the prospective employer with data upon which to base his selections.

In the absence of any specific personnel organization on the part of the universities some of the employers have taken the initiative by sending representatives to the schools with a view to the selection of the most promising graduates. Individual railroad officers through their affiliation with certain institutions have followed much the same procedure, but

*Our comparisons are for 1918, the latest year for which complete figures are available. For 1919 the train accident bulletin shows total losses of \$22,675,820 (see Bulletin 74). Item 3 (below) for 1919 is \$104,244,000, and for 1920 it is estimated at 110 millions, or higher. For 1918 the available data can be tabulated as follows:

1—Train accidents; damage to cars, engines and roadway.....	\$20,954,350
2—Personal injury and death claims.....	\$33,369,199
	11,123,067
Two-thirds (estimated) due to train accidents..	\$22,246,132
3—Damage to freight, estimated.....	34,799,518
	\$78,000,000

the policy has been that of the individual rather than the organization and the results have been in proportion.

With an increasing realization of the extreme importance of personnel work, particularly as applied to the selection of officers, there is every reason for increased attention on the part of the railroads toward their relations to the technical schools, and there should be careful study of this subject by such organizations as the American Railway Engineering Association. It has concluded to study also the problems of labor; is not the present a fitting time for extending this subject to include the problems of the employment of brains as well as brawn?

Real Versus Actual

Railway Retrenchments

ALL SIGNS INDICATE that the railways have entered a period of declining traffic and earnings. Their principal problem for many months has been that of increasing the efficiency with which they used the available facilities in order that they might handle a constantly increasing traffic. In a period of declining business the most important and difficult problem is to reduce operating expenses.

The difficulty of reducing expenses enough to offset a substantial decline of business and gross earnings, without doing it in ways that cause deterioration of the physical property, is probably greater in the railroad than in any other industry. When the business of a manufacturing company declines it can temporarily close its plant. A railway cannot do this. Once the manufacturer has closed his plant he can usually reduce wages before he reopens it. The conditions which make it impracticable for a railway to shut down its plant render it extremely difficult for it to reduce wages. An additional obstacle to reductions of railway operating expenses is created by the fact that railway wages are now subject to public regulation.

While a railway cannot suspend operation it often can make large reductions of expenses by sharply curtailing the amount of maintenance work done on its tracks, locomotives and cars. This policy has been adopted by most railways in periods of declining business. It is, however, a fact clearly recognized by all railway executive, operating, mechanical and engineering officers that reductions in either maintenance of way or maintenance of equipment which result in the deferring of work which really needs to be done always result later in making necessary expenditures largely exceeding the nominal savings effected. It is a generally accepted principle that in the long run the cost of making up deferred maintenance is at least twice as great as the amount nominally saved by deferring it.

Owing to the well recognized extravagance of deferring maintenance, the most careful consideration should be given at the present time by railway managements to proposed programs of retrenchment. The management of a railway whose net operating income is inadequate even when business is good and which, consequently, is brought to the verge of bankruptcy as soon as business declines, can hardly be blamed in periods of declining business for cutting its maintenance to the bone, although experience shows that this policy often only postpones bankruptcy and makes it more sure. There can be no good reason for the adoption, under present conditions, of a similar policy by railways whose earnings are practically certain, even though the greatest conceivable decline of business should occur, to be sufficient to pay the amounts of interest and dividends which they ordinarily have paid.

The railway managements, since the roads were returned to private operation, have been making heroic efforts to do enough maintenance work to restore the properties to a good operating condition. While much progress in this direction

has been made, much remains to be done. Most railways are still far from the goal of reducing the number of bad order freight cars to 4 per cent. Most of them have not laid anywhere near enough new ties and rail to offset past years of deferred maintenance of track. If there had continued to be sufficient business to tax their capacity no one would have questioned the wisdom of continuing vigorously the rehabilitation of the properties.

As a matter of fact, however, the reasons for continuing the work of rehabilitation are as forceful now as they were before the decline of business began. The experience of the last five years has demonstrated that in periods of active production the industries of the country can offer the railways more traffic than they can handle with their present facilities. There are many reasons for believing that the present decline of traffic will be short, as was that in the spring of 1919. There will doubtless continue to be all the coal traffic the roads can handle. There are vast amounts of grain, cotton and other agricultural products in the country whose shipment is being delayed by recent declines of prices, but which in the near future must be shipped. The recent reduction of business activity is largely due to a revolt of consumers against the high prices of manufactured and other commodities, which has made it necessary for concerns of many classes to reduce their output.

These declines in prices temporarily have increased the strain upon many financial institutions. But after the present process of liquidation has gone on for a while the declines of prices and the reductions of wages which are taking place in many industries probably will ease the entire credit situation by reducing the amount of credit which the banks will have to extend to concerns to handle any given amount of business. Prices in general seem likely soon to reach a new level where they will stay for a while. With a shortage of almost everything resulting from the world war still prevalent, there seems no good reason for believing that prices will long continue to decline. When they become more stable consumers undoubtedly will begin to buy things in larger amounts. Improvement in the credit situation will tend to enable production in general to be resumed on a large scale. There is an enormous shortage of buildings for both business and residential purposes in this country and it seems only a matter of time until, as a result of readjustments now taking place, there will be a large revival of construction activities.

It would be hazardous to predict how long it will be before there will be a large and extensive revival of business activity, but it is bound to come, and for the reasons mentioned and others that might be mentioned, it seems probable that it will not be long postponed. When it comes, are the railways again going to be caught unprepared for it? This will depend largely upon the policy regarding rehabilitation and improvements followed in the period immediately ahead of us. In some respects this period will be favorable for actively prosecuting railroad maintenance and improvement work. Railway labor will be more efficient than it is in a period when every employee knows if he is laid off he can immediately get a job elsewhere. Manufacturers of materials will be better able to fill orders, and will perhaps be able to make better prices than they have been in the recent past or will be after business activity revives. If the railways do not now go on doing all the rehabilitation and betterment work they can, they will not be able satisfactorily to handle traffic when business revives, and it will cost them more to handle it.

The question will naturally be raised as to where the railways are to get the money with which to do extensive maintenance and improvement work. Nobody can answer that question until more is known as to the effect of the new passenger and freight rates upon earnings, and as to how heavy the decline in business is going to be. The one point we

are trying to emphasize is the expediency, from a railroad standpoint, of going forward with as large maintenance and improvement programs as the earnings will permit.

There is another point of no little importance to be considered besides the effects which the doing of a reasonable amount of maintenance and improvement work at the present time will have upon the handling of future business. The Transportation Act requires the Interstate Commerce Commission to so fix the rates as to enable the railways to earn an average return of $5\frac{1}{2}$ to 6 per cent. If railways which are financially able to continue adequate expenditures for maintenance do not do so, they will, by making merely nominal reductions of their operating expenses, make the nominal net return earned by the railways as a whole larger than it otherwise would be. The net return earned under both favorable and unfavorable business conditions must be taken by the Interstate Commerce Commission in future as the principal measure of the rates it should allow the railways to charge. Therefore, for the railways to so reduce maintenance expenses as arbitrarily and nominally to increase the net return earned by them would indicate that they do not need as high rates as they actually do. It would tend in the long run to increase operating expenses more than they otherwise would be increased, and thereby in the long run to reduce the net return actually earned or make it necessary for the Commission to fix higher rates than otherwise would be necessary. In other words, unwise reductions of maintenance to make an artificial showing would, in the long run, be bad both for the railways and for the public that pays the rates.

The conditions demand that no effort shall be spared to make every real and legitimate reduction in expenses that is possible. Railway officers must, in the period immediately ahead, devote the same ability and energy to reducing expenses that they have put forth in recent months to increasing the amount of traffic handled. But the welfare of both the railways and the public demands that economies shall be effected by making real savings in the use of labor, materials and fuel, by increasing the average load per car and per train, by reductions in loss and damage of freight, and so on, and not merely nominal savings which will leave the roads crippled when traffic revives and which, therefore, in the long run will cost more than they are worth.

Railroads Handle a Month's Traffic Without Return

STATISTICS which have just been made public of the operations of the railroads for the first six months after their return to private management on March 1 show that during this period they have performed 23 per cent more freight service and 37 per cent more passenger service than the average for the corresponding six months of the pre-war test period on which their guaranty was based.

There have been some attempts to make the public believe that the railroads were being accorded unusually generous treatment by the provision in the transportation act for a guaranty, based on what the railroads actually earned before the war, to allow the Interstate Commerce Commission time to make the necessary adjustment of rates so that they could get along after September 1 without further expense to the taxpayer.

The statistics, however, show that during this six-months' period the freight service performed by the railroads amounted to 225,688,000,000 net ton miles, as compared with 183,515,000,000 in the average six months of the test period, and the passenger service to 24,500,000,000 passenger miles, as compared with 17,845,000,000. In other words, the roads transported the equivalent of 42,173,000,000 tons of freight a distance of one mile, and 6,655,000,000 passengers

a distance of one mile, or more than a full month's business, for which the companies received not a cent of return.

During the three years ending June 30, 1917, which by the federal control act was made the test period on which was based the "standard return" guaranteed to the railroads as compensation for the use of their property by the government, the railroads earned an average net operating income of about \$900,000,000, which was about 5.2 per cent on their property investment. This has been frequently referred to as representing the results of the "three biggest years in railroad history," but from the standpoint of the amount of traffic handled the average of the test period has been exceeded each year for three years since. Nevertheless, the net income from railroad operation received by the railroad companies has been limited to that amount ever since January 1, 1918, and a large part of it has not even yet been collected because some of it was withheld by the Railroad Administration in part payment for capital improvements and most of the guaranty for the six months after the termination of federal control has been held up by the recent decision of the comptroller of the treasury.

Rates were increased, so that the shippers and passengers paid more for their service than before, just as they paid an even greater increase for practically every service they received or article they bought, but because the advance in rates was less than the increase in expenses, a large part of the guaranty was paid out of the public treasury. Yet, during a period when there was much complaint of profiteering in almost every other business, there was no increase in the return received by the railroad companies or their stock and bond holders as compared with the pre-war period.

During the six months from March 1 to August 31 of the pre-war test period the railroads earned an average net railway operating income of \$459,000,000, and for the corresponding six months of 1920 they will ultimately receive an approximately similar amount. The net loss to the government for six months was approximately \$650,000,000 because the roads had an actual deficit of some \$210,000,000, but most of this represents the increase in wages for May, June, July and August under the retroactive award of the Railroad Labor Board, and the amount to be received by the companies is not affected by it.

The total operating revenues of the railroads in the six-months' guaranty period of 1920 were \$2,894,853,000, an increase of \$1,182,550,000 as compared with the average of the corresponding six months of the test period, or 69 per cent. The operating expenses for the six-months' guaranty period were \$2,935,690,000, an increase of \$1,777,000,000 or 153 per cent. Taxes were nearly doubled, amounting to \$144,910,000, an increase of \$69,540,000, or 92 per cent, and other items resulted in a decrease in net operating income of 146 per cent. In the test period operating expenses were 67.66 per cent of the total operating revenues, but in 1920 they amounted to 101.41 per cent of the revenues.

Of the total increase in revenues of \$1,182,550,000 in the guaranty period as compared with the test period, an estimate based on the increase in ton miles and passenger miles indicates that about \$274,000,000 was due to increased freight traffic and \$133,000,000 to increased passenger traffic, in addition to the increase in rates made by the Railroad Administration in 1918, but the companies received no benefit from this. The increase in ton miles of freight handled in the six months of 1920 as compared with the average six months of the test period is nearly equivalent to the amount of freight business handled by the railroads in August this year, which was the heaviest freight month in their history and the increase in passenger traffic was more than the average business for a month and a half.

Whatever else may be said of the results of the experiment in government operation it was a 100 per cent success in preventing any profiteering by the railroad companies for a period of two years and eight months.



The Old Structure, Showing Work of Encasing the Old Piers and the Building of New Intermediate Piers

Philadelphia & Reading to Build 46-Arch Bridge

Work Begun on Double-Track Concrete Structure Crossing
Susquehanna River at Harrisburg, Pa.

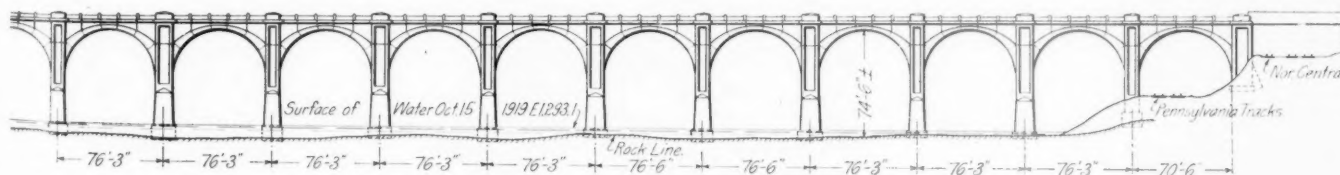
By E. Chamberlain

Assistant Engineer, Philadelphia & Reading, Philadelphia, Pa.

THE PHILADELPHIA & READING has recently commenced the replacement of its bridge crossing the Susquehanna river at Harrisburg, Pa. This work will be augmented by considerable work on several of the land bridges or viaducts located at various points in the approaches through the city proper. As a result the movement of trains will be greatly facilitated at this point. The existing double track superstructures of the bridges through Harrisburg will be

bridge will replace a wrought-iron deck-truss structure having 23 spans, 149 ft. 4 in. center to center of end pins and 24 ft. 9 in. from center to center of upper and lower chords, and one 69-ft. through plate girder bridge spanning the tracks of the Northern Central.

The river piers were built originally for double track, and the superstructure for single track, though it was so designed that a third truss could be added whenever two tracks were



Part Elevation of the Bridge Being Built

replaced with new and heavier steel structures while the long single-track crossing of the Susquehanna will be dismantled, the old piers strengthened, new intermediate piers built and a double-track reinforced concrete bridge erected, having 46 arches measuring approximately 76 ft. from center to center of piers.

The new structure is on the line of the Philadelphia, Harrisburg & Pittsburgh branch which connects with the Lebanon Valley branch, passing over the streets of Harrisburg and the tracks of the Pennsylvania by means of the double-track bridges and approach viaduct mentioned above. After crossing the Susquehanna the line extends to Shippensburg where it connects with the Western Maryland. The new river

required. The masonry for this old bridge, which was completed in 1890, including the approach work through the city, contained approximately 6,258 cu. yd. of masonry on land, and 9,773 cu. yd. in the river piers, the latter being built in range-work from bed-rock to copings and composed of Clearfield county sand stone, laid with cement.

Originally the completed single track occupied its double-track position, or about 1 ft. 7½ in. off center of the bridge trusses, each of which was designed to carry two-thirds of a single track load. With the increasing engine and train loads, it was found that the masonry in the tops of many of the piers was being displaced, necessitating the reconstruction of the tops of these piers. It was also ascertained that

a number of the eye-bars of the trusses were loose, increasing the load carried by the other bars to an unknown extent. The trusses were apparently deficient in rigidity and swung considerably during the passage of trains. To relieve this condition, the track was shifted so as to bring two-thirds of the single track load on the heavier truss, and the speed of trains was reduced to 10 miles per hour as a temporary expedient. In fact, all the land bridges and the river bridge were stressed to their limit, and required rebuilding in order to carry the very heavy traffic at this point. This movement consists almost entirely of solid through trains of the Philadelphia & Reading, the Baltimore & Ohio, the Norfolk & Western, the Western Maryland and the Cumberland Valley. The number of trains using this bridge in completed movements daily is 75, without counting switching movements, and the daily revenue tonnage averages about 140,000.

The new structure, which will be built on the same alignment and on practically the same grade as the present bridge, will have 46 arches having an average clear span of 66 ft. It will be built entirely of concrete and for two tracks with a total length of 3,507 ft. 9 in. center to center of end piers. The base of rail at the eastern pier is about 54 ft. above normal water in the river, and at the western pier about 79 ft., the grade on the bridge being 0.7 per cent. The depth of water in the river ranges from about 2 ft. as a minimum to 8 ft. 6 in. as a maximum.

The old piers, which are supported on a rock bottom, are to be encased in concrete and new intermediate piers built. The concrete encasement around the old piers will have a mini-

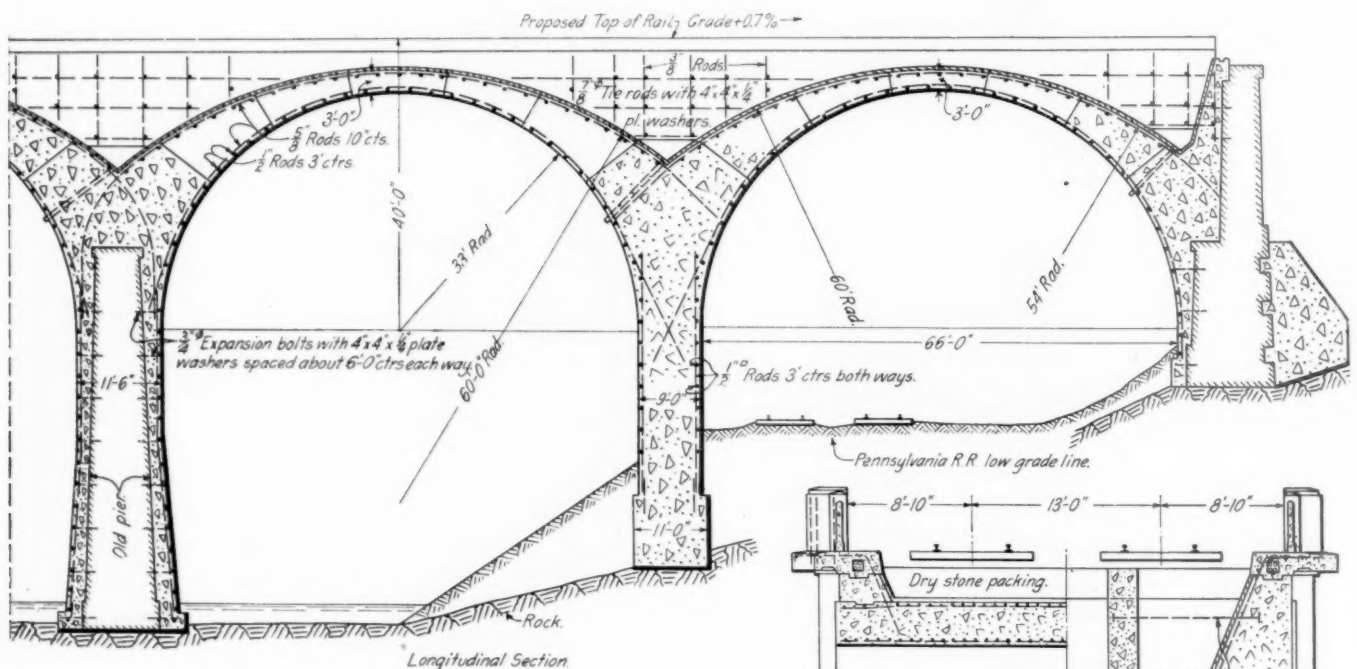
for this type of construction. A clearance of 28 ft. 6 in. has been provided for, figuring on a basis of the maximum high water in the past.

The spandrel walls are reinforced and have a batter on the back faces of 5 in. in 12 in. They are surmounted by a con-



Narrow Gauge Track Carried on Cantilever Extension at Left

crete coping of simple design in which a four-way vitrified clay duct is placed on each side of the bridge to carry the necessary present and future wiring, terminating in hand holes spaced 250 ft. apart on both sides. The reinforced con-



Typical Details of the Structure

mum thickness of 18 in., reinforced with $\frac{5}{8}$ -in. rods, spaced 3 ft. center to center both ways, and with expansion bolts 6 ft. apart, anchored 12 in. into the old piers. Each of the reconstructed piers will have a thickness at the springing line of 11 ft. 6 in., while the new intermediate piers will have a thickness of 9 ft. All foundations will be approximately 51 ft. 9 in. long at the base and 35 ft. long above the nosing and up to the parapet.

The arch ring is of semi-circular design with radii of 33 ft. and 60 ft., giving a crown thickness of 3 ft., and a radial width at the haunch where it joins the pier section, of about 11 ft. The ring is thoroughly reinforced for temperature changes and will be poured in sections in the usual manner

crete railing, 4 ft. in height, will consist of ornamental posts and intermediate solid panels, built up on the copings, and having a clear width between inside faces of 30 ft. 8 in. The over-all width of the bridge between faces of rings is 32 ft. and the clear width between copings 26 ft.

The faces of the arch rings and spandrels will be plain except for V-grooves at the construction joints. The tops of

the arches and the inside faces of the spandrel walls are to be waterproofed with two layers of cotton fabric saturated and cemented together with asphalt. This membrane will have a 2½-in. concrete protection course of a 1-2-4 mix with ¾-in. stone, all reinforced by No. 12 electrically welded wire cloth, with a 4-in. by 4-in. mesh.

Drainage at each pier will be secured by means of cast-iron pipes 8-in. in diameter carried through the arch ring. The space between the spandrel walls and over the arch rings will be built up and filled with dry stone packing, of what is commonly known as one and two-man size, to about 1 ft. 9 in. below the top of the rail.

The coffer-dams now being used for the river piers are generally of the Blaw-Knox type of steel framework, with two lines of Lackawanna steel sheet piling, about 18 in. apart, enclosing the puddle wall. Four and eight-inch pumps are being used for unwatering these dams.

Work is proceeding from both shores, separate concrete

Steel centering will be used for the arch rings. These will be supported upon steel brackets inserted in pockets formed in the face of the piers below the springing line. All concrete will be of a 1-2-4 mixture, using a 1½-in. crushed stone throughout except in the railing which will be of ¾-in. size. The approximate quantity of concrete in the new structure is 88,000 cu. yd.

The new structure, as well as the other secondary structures, which are to be renewed was designed by and is now being constructed under the direction of the engineering department of the Philadelphia & Reading, Samuel T. Wagner, chief engineer, Clark Dillenbeck, assistant chief engineer, and P. S. Baker, engineer of bridges and buildings. The field work is in charge of C. H. Hitchcock, assistant engineer, and the writer. The contractors on the work are the James McGraw Company, Philadelphia, Pa., and T. L. Eyre, Philadelphia, to whom the foundation work was sub-let.

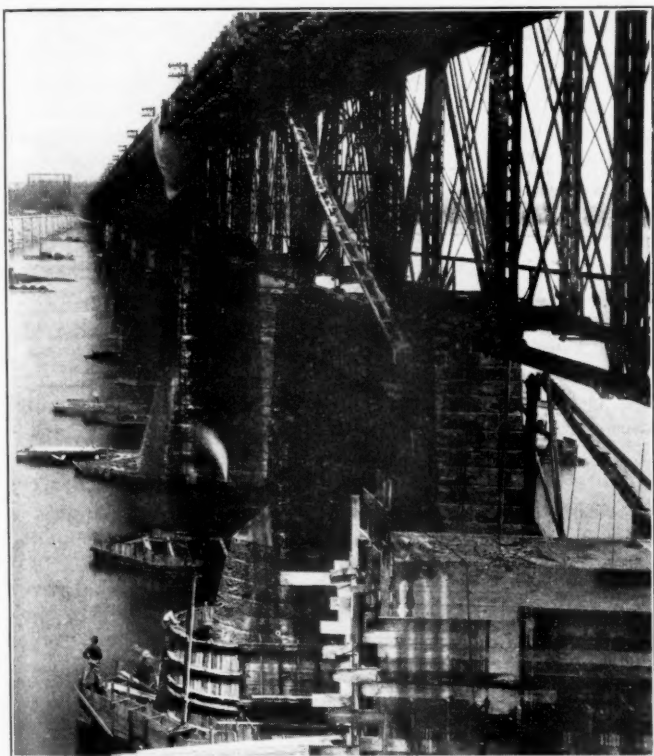
I. C. C. Reports on Coal Conditions

AN ABNORMAL domestic situation, intensified by a foreign demand, has been the primary cause for the exacting during the first nine months of this year of prices for coal "not justified by the cost of production" and has forced railroads entering the spot market at ports along the Atlantic seaboard to pay "exorbitant prices," the Interstate Commerce Commission says in a report of an investigation of certain phases of the coal situation which it has made in response to a Senate resolution.

In reply to a question as to how many cars were used in March and April to carry the coal which went offshore for foreign bunkers and cargoes the Commission says that the total tonnage thus shipped was 3,572,619 long tons in March and April, 1920, combined. In the first quarter of 1920 the average carload of bituminous coal on the Pennsylvania, the Baltimore & Ohio, the Reading, the New York Central, the Erie, the Norfolk & Western, the Chesapeake & Ohio, the Virginian, the Western Maryland, and the Southern was 51.56 net tons, equivalent to 46.04 long tons. The 3,572,619 tons above mentioned are thus equivalent to 77,598 carloads. There are no exact figures of the average length of time that a car consumes in making a turn-around between the coal fields in question and the ports specified. An investigation by the Tidewater Coal Exchange covering the eighteen months ending December, 1917, indicated 12.1 days as the time required. G. N. Snider, coal traffic manager of the New York Central Lines, estimates that the time is more nearly 16 days. We may assume that a car in two months could make approximately four trips. To haul the 77,598 carloads would on this basis require 19,399 cars in continuous service, making no allowance for repairs. If the 12 days for a turn-around be accepted, only 15,265 cars would be required.

As to how far the price of coal for locomotive use on American railroads has been raised because of the upbidding of coal prices by foreign buyers the Commission says that in normal times it is not probable that foreign purchases have a marked effect because of the relatively small amount of coal exported as compared with the total production in the United States.

"With an estimated production of 400,000,000 net tons, or 357,142,857 long tons, for the first nine months of 1920 the export and foreign bunker coal for the nine months was 8.5 per cent of the estimated total production. In particular situations, the foreign demand plays a much more important part than is indicated by the comparison of total production and export for the United States as a whole. In the first nine months of 1920, the export and bunker coal through the five ports named, amounted to more than one-half of the shipments to those ports. Those railroads which were



Encasing the Old Piers with Concrete

mixing plants having been installed at each end of the bridge. On the east bank of the river the mixing plant has been located at ground level and the concrete is being elevated to the top of the bridge, where it is discharged into side dump cars. These are conveyed to the work on a 24-in. gage railway by 3-ton gasoline locomotives, and the concrete is distributed to the different foundations through separate steel chutes. At the western end, the concrete is dumped from the mixer to the cars direct and then conveyed to the work in a similar manner.

In order to continue traffic over the present bridge during construction it was necessary that the arch rings be built in two longitudinal sections. On the completion of the foundations the first section, 13 ft. 6 in. wide, will be built on the down-stream side of the present bridge. In order to retain the stone fill supporting the track a middle wall will be built up of reinforced concrete 2 ft. wide and anchored to the spandrel walls by ¾ in. tie rods. When completed traffic will be transferred to this section, after which the old superstructure will be dismantled and the remaining section of arch rings completed.

forced to buy spot coal at the exorbitant prices quoted at these ports in 1920 were directly affected by the upbidding of prices by foreign buyers. At Baltimore, sales were said to be made in July, 1920, f.o.b. piers as high as \$17 and \$18 a long ton (Coal Age, July 29, p. 263). But railroads outside of New England did not generally buy coal at such prices. The following table shows the result of an inquiry by the Commission on this subject for the month of July, 1920:

QUANTITY AND AVERAGE MINE PRICE OF BITUMINOUS COAL PURCHASED BY LARGE STEAM ROADS IN THE MONTHS OF JULY, 1919, AND JULY, 1920

Geographical district	Number of roads reporting	Quantity purchased—Net tons			
		On contract		Spot	
		July, 1920	July, 1919	July, 1920	July, 1919
New England	7	458,824	443,387	366,399	33,182
Other Eastern	49	4,099,458	3,678,806	403,808	224,213
Southern	30	1,504,435	1,353,955	319,741	92,813
Western	73	3,564,774	3,403,873	428,496	126,560
Total, all districts....	159	9,627,491	8,880,021	1,518,444	476,768

Geographical district	Cost at mine			
	On contract		Spot	
	July, 1920	July, 1919	July, 1920	July, 1919
New England, total cost..	\$1,717,165	\$1,026,232	\$3,624,199	\$60,323
Average price at mine per net ton.....	3.74	2.31	9.89	1.82
Other Eastern, total cost..	13,249,226	8,332,044	1,994,717	520,430
Average price at mine per net ton.....	3.23	2.26	4.94	2.32
Southern, total cost.....	4,819,341	3,219,521	1,708,132	233,925
Average price at mine per net ton.....	3.20	2.38	5.34	2.52
Western, total cost.....	11,477,632	9,369,204	1,795,475	319,516
Average price at mine per net ton.....	3.22	2.75	4.19	2.52
Total, all districts, total cost	\$31,263,364	\$21,947,001	\$9,122,523	\$1,134,194
Average price at mine per net ton.....	3.25	2.47	6.01	2.38

"The prices shown in the table are the average prices at the mine. The average delivered prices on spot bituminous coal purchased during July, 1920, for seven New England roads, ranged from \$11.64 to \$14.46 per net ton.

"It would be an error to assume that fundamentally the high prices paid for spot coal are to be ascribed mainly to the large exports. There also has been an abnormal domestic situation. At the time of the armistice, in 1918, there was an abundance of coal. Following the armistice, consumers drew upon their stocks instead of placing orders for coal. After the bituminous coal miners' strike in November, 1919, the reserves were very low. Progress in restoring them was halted by various factors, such as sporadic strikes at mines, a partial paralysis of transportation, especially in the eastern region, caused largely by the switchmen's strike in April, 1920. The foreign demand intensified the abnormal domestic demand and the several factors together afforded an opportunity for the exacting of prices not justified by the cost of production. For the country as a whole, the foreign demand was a minor factor, but in that part of the eastern coast section which was dependent on shipments by tidewater lines the foreign demand was a very important factor."

NO REASON TO COMPLAIN.—The freight increase in the United States between 1914 and 1920 is officially estimated at 67 per cent, as against 114 per cent in Great Britain and 200 per cent in Sweden.

"COMMUTING" BY MOTOR.—Statistics recently compiled show that 420,000 persons travel back and forth to New York City daily by automobile. This figure is not inclusive of those using autos within the city borders. Motor trucks to the number of 7,482, travel on 15 ferries in 24 consecutive hours. Bridge traffic is heavy, especially at certain hours, as many as 1,344 vehicles having been counted in an hour. The number of cars and trucks entering and leaving the city daily is placed at 154,700. The average number of passengers per car is 2.7, while the average load per truck is 1.14 tons.

Compensation of Chicago & Alton Limited to Standard Return

WASHINGTON, D. C.

A BOARD OF REFEREES appointed by the Interstate Commerce Commission has submitted a report to the President, finding that the just compensation of the Chicago & Alton for the use of its property by the government during the period of federal control is \$3,178,314.92 for each year, conditioned upon the observance by the government and plaintiff of the provisions of the standard contract as to upkeep. This amount is the standard return for this company based on its net operating income for the three years ending June 30, 1917. The company, which failed to reach an agreement with the Railroad Administration, claimed that its compensation should be not less than \$4,592,500, or 5½ per cent on a valuation of \$83,500,000. The company also claimed that if its just compensation be based upon its earning capacity, the condition, value and transportation capacity may be best judged by its railway operating income for the year ended June 30, 1917, which amounted to \$4,105,000, but which the company asserted should be increased by amounts of \$111,720 and \$375,780, respectively, because of excessive and abnormal charges during that year for depreciation and equipment and for deferred maintenance. By so readjusting its income, the company had reached the conclusion that its just compensation, when measured by its earnings, would also be \$4,592,500. Counsel for the Railroad Administration insisted that the compensation should not exceed the standard return. The referees failed to perceive any support for the contention that the value of the use of the property when taken was in excess of the standard return.

The company contended that during a substantial portion of the test period its system of transportation was in an undeveloped, abnormal and exceptional condition and that its earnings for that period did not reflect the benefit of a large amount of deferred maintenance work and extensive improvements to the property. Its figure for the value of the property was taken from the Interstate Commerce Commission's report in 1907 in the matter of consolidations and combinations of carriers, in which were discussed the financial transactions of the Chicago & Alton, and which stated the value of the property, as it appeared on its books on December 31, 1898, as \$39,935,887. To this the company added expenditures since that time and \$11,000,000 for capital expenditures charged to operating expenses prior to 1899. The referees say the report does not show that the commission at that time undertook to value the properties of the road or made any inquiry as to the correctness of the entries in its books and that they are unable upon the evidence submitted to fix the value of the property. The board, therefore, devotes its consideration largely to the earning capacity, but expresses the opinion that the company has not proved that its expenditures for additions, betterments or improvements are not fully reflected in its revenues of the test period or that the alleged undeveloped or abnormal conditions were exceptional during the test period. The facts show, the report says, that the property was in such condition of repair and that such facilities were provided as the normal demands of a constantly increasing traffic required. It also says there is no evidence that the charge for depreciation was more than the actual depreciation during the period and the amount of the claim for deferred maintenance is disallowed because of insufficiency of evidence. The report says that the amount of this claim is apparently reached by taking a sum sufficient to produce the amount of the claim, \$4,592,500, which was arrived at by taking 5½ per cent of the claimed value. The report also says that the evidence has not convinced the referees that they should find that the income of this system would probably have been increased or even maintained after December 27, 1917, had it not been taken under federal control.

Getting Greater Mileage Out of Freight Cars

Second Series of Discussions of This Problem Point Out Ways to Improve Performance

THE TWO PRIZE WINNING PAPERS received in the contest on Means of Increasing Car Mileage and three others which received special mention were published in the *Railway Age* of November 12. Several other papers received in this contest are abstracted below and still others will appear in later issues.

Know Every Car

By F. M. Barker

Division Superintendent, Lehigh Valley, Wilkesbarre, Pa.

"KNOW EVERY CAR ON EVERY SIDE TRACK EVERY DAY," epigrammatically tells the whole story. To accomplish this (1) assign a member of the superintendent's staff (a train master or assistant) for outside work as a car efficiency expert to analyze every phase of the situation and supervise movement, check and surprise-check yards and stations, and waybills for cars in movement through yards, he to be given ample authority and held responsible for car performance and (2) assign a man in the superintendent's office (an assistant chief dispatcher or car distributor) to receive daily reports of all cars standing on the division, except those in active tracks passing through yards; follow up delayed cars through agents and yard masters, furnishing full information to the train master and freight traffic representative; the few outstanding bad cases developing each day to be handled by the superintendent personally by telephone, letter or interview.

Present day influences have a tendency to cause men to lose their old time spirit and interest and as this car job must be put over by the men in the ranks, it can be accomplished only as we arouse in them an appreciation of the seriousness of the present car shortage, and the fact that conditions today are far different than they ever have been. Therefore, wherever a few are gathered, whether in the rest house, caboose, or sunning themselves on a pile of ties during lunch hour, start a discussion on cars, so that everybody on the division will be talking and arguing cars. Never let a staff, safety, agents', fuel or any other meeting of railroad men pass without discussing cars.

Agents and yard masters should be required to know personally of all cars standing on tracks under their jurisdiction and give particular attention to those over 24 hours old. Issue comparative statements showing records made at different stations and yards and where the performance at one point has been particularly good, cause a news item to appear in the local newspapers commending the railroad forces, or the public, or both.

Be at least doubly as prompt in loading and unloading carload railroad company material as we expect the public to handle their business. The latter will not enthuse when they see cars lying around and being abused by us. The public will co-operate to exactly the extent that we do our part and the best argument we can use is prompt and dependable switching service. Even though a car has made splendid time from originating point to destination, if it is delayed excessively in placement, or, in the case of an outbound car, is permitted to stand 10 to 20 hours before being moved, the receiver or shipper will see only the immediate delay and usually consider all the talk about car efficiency as pure bunk.

Cars made empty on industrial tracks should not be permitted to remain there over-night, except when required for

reloading, for if the shipper has made a special effort to get the car unloaded and the following day finds it lying at his plant, he will feel that we are insincere and have caused him additional expense and effort that we are not willing to match ourselves.

Do not give shippers an opportunity to point to delays on the part of the railroad company, even though costs are increased considerably in providing supervision and yard engines, as the expense, if incurred conservatively and thoughtfully, will be more than offset by the increased efficiency of the car, and in addition, bring large returns through the effect it will have in securing the sincere co-operation of the public.

While 99 per cent of shippers are imbued with the spirit and are with us wholeheartedly in our efforts to make the car do a 24 hour job every day, in spite of all we can do there are those who consider their own interests solely, and the most effective means of bringing this element to time is the prompt and rigid use of the embargo. The public will accept almost any workable rule if its application is fair and uniform. If for no other reason, fairness to those who willingly abide by the rules makes it necessary that we compel the indifferent shipper to comply. Otherwise the whole structure will fall.

Watch the Terminals

By C. O. Jenks

Vice-president, Great Northern, St. Paul, Minn.

A speeding up of cars through terminals would aid materially in increasing their average daily mileage. Avoidance of congestion, prompt disposition, prompt loading and unloading, a reduction in rehandling from arrival to placement for loading, unloading or delivery to connecting line, more prompt switching out and forwarding after loading or unloading, prompt and regular acceptance by receiving line, are all important factors. Cars in transit make more than the goal of 30 miles per day, but terminal delays go far in reducing the average below that figure. At large industrial terminals the very large number of cars making a slow turn mount rapidly into car days with no addition to mileage totals.

It is of utmost importance that carriers at all times keep on top of their bad order cars, for they pile up car days to the detriment of mileage performance. On the basis of five per cent of the equipment on a line being in bad order, it is necessary to increase by 1.5 miles per car per day those in active service in order to attain an average of 30 miles per day. Adding only five per cent more for cars in terminals requires a further 1.5 miles per car per day increased performance of active cars. The two together detract by 10 per cent from the 30 miles per car per day goal urged by the Railroad Executives Advisory Committee. And yet railway systems, operating large terminals in important industrial centers, have considerably more than 10 per cent of the equipment on their lines tied up between bad order cars and cars awaiting completion of terminal handling.

Carriers are loath to place embargoes, particularly on competitive business, under competitive conditions. While competition is admittedly the life of trade, it hardly seems good business to continue to accept traffic beyond ability and facilities to handle remuneratively, for this results in con-

gestion, consequent slow handling, tying up and loss of use of equipment. It would seem a better policy to restrict the traffic to the capacity of the facilities, thereby affording a quicker delivery and a quicker release of equipment, making it available for other loading. And this additional loading would, no doubt, make up in net result, seeming losses sustained through use of the embargo. Of course, embargoes must be intelligently placed and as intelligently released, but during their life, rigidly enforced.

The Spirit of Car Conservation

By O. C. Castle

Superintendent Transportation, Southern Pacific Lines,
Houston, Tex.

It is essential that the entire force be imbued with the spirit of car conservation. Without a sustained interest, no amount of supervision will secure the live, snappy handling that is indispensable. This condition can be obtained by systematic campaigns designed to stimulate interest. Periodical circulars, phrased in language that will appeal to those responsible for car handling, should be issued. These may contain facts or arguments on the subject in general, chatty talks of an encouraging nature, and by all means, data showing what has been accomplished from month to month and explanatory figures showing what the results mean in per diem saving or increased earnings.

The use of simple graphic charts in connection with the explanatory printed matter can be made very effective. Officers should ask employees to comment on the data given them, to bring out suggestions for improvements and to give specific instances of good handling. The publication of these comments in subsequent circulars helps to keep the interest alive.

Interest in car handling may also be stimulated and sustained through periodical "efficiency meetings." Car efficiency should hold an important place on the docket of all staff meetings called by the general manager. If such meetings are not held with sufficient frequency, the superintendent of transportation should arrange for meetings during periods of car shortage, as the situations may warrant. Such meetings should be attended by general officers whose duties touch upon car handling, by chief dispatchers, etc.

Superintendents should call meetings of agents and yardmasters as frequently as conditions warrant, at which all matters touching on car movement should be discussed. These meetings should also be attended by the division staff and by mechanical department representatives.

Organizations should be effected at all junction or interchange points. At the larger points, regular efficiency committees are generally in existence. At the smaller points, the local agents and car inspection forces should meet informally as often as once each week for conference and co-operation in matters relating to the handling and movement of cars.

The Elimination of Needless Switching

By F. Lincoln Hutchins

Baltimore, Md.

One of the greatest wastes in car movement, and one of the greatest causes of a low average rate of miles per car per day, is in the needless reswitching of cars enroute. The great effort of all divisions is to get the largest possible movement as regards each division, with no thought or effort to make the work of other divisions more expeditious; no concert of effort to eliminate waste of time in handling cars by connections. A line 1,000 miles long will have something like ten divisions, at the terminals of which through cars are switched and reswitched, resulting in delay, costly handling, damage, and yard congestion. The first and most important

element in increasing the miles per car day lies in efficient marshaling of cars into trains. The ideal is a continuous, uninterrupted movement of cars from the originating to the delivery terminal without leaving the main line. This ideal may be rarely obtainable, but a nearer approach to it may be secured than is now usual.

Objection is made that the originating points do not have the necessary accumulations for such a through movement, or if they do have, that there is not sufficient room in which to marshal them. Whatever handicaps of this kind exist may be remedied in part, if not wholly, by determined effort with the goal in view. In some cases the adoption of regular forwarding days will induce the necessary accumulation; in other cases a territory may be grouped around a central point where through trains may be made up; but aside from such exceptional cases there is room for great improvement over present methods.

Take the 1,000 mile road, or a combination of roads between important terminals, divided into divisions of 100 miles each. The originating terminal has, let us say, a regular business of 10 cars for the other extreme terminal. Is there any good reason why those ten cars could not go through without leaving the main line, provided they were marshaled together in one place in the train? At each division point these cars could be supplemented by cars for the same destination and continue their journey without being reswitched. It is imaginable that with efficient co-ordination they could be kept rolling with only slight delay at the several division points. It is also apparent that, like a snowball, the train would become a solid through train, requiring finally only the changing of locomotive and crew at the divisional terminals.

Many Economies Possible

Through Pooling Arrangements

By E. J. Tice

Chief Clerk to Superintendent of Transportation, Norfolk & Western, Roanoke, Va.

Nearly every railroad has some particular commodity or commodities running in such volume as to constitute a special problem. On one road it may be tidewater coal, and on another ore for furnaces. The tidewater coal on one road amounts to about 8,000,000 tons yearly. It has been found that pooling of the coal and the use of the permit system is necessary to secure car efficiency in the handling of this traffic. The pool or exchange has the unique features of requiring each shipper to bear his individual delay in the release of cars, and of holding each shipper responsible for furnishing vessels for the coal to his credit, regardless of whether he may have sold the coal to other shippers. In other words, a shipper must deliver his coal to vessels and actually release the equipment—the fact that he may have loaned the coal or sold it to another shipper does not release him from the obligation to the carrier to see that the vessels are forthcoming for prompt loading.

The working of this plan of handling tidewater coal has made it unnecessary for the road referred to to place a general embargo, due to accumulation, on tidewater coal for more than a year. At times it has been necessary to restrict all permits on account of a greater volume of tonnage being offered than it was possible to handle, but here again the permit system saved car delay. Cars in tidewater coal trade have made as high as 80 miles per car day.

The tidewater shipper is required to furnish information as to his vessel arrangements as soon as possible to the transportation department, with the actual names of vessels, tonnage, and dates due in the harbor, together with a statement showing the names of the mines from which shipments will

be made, and the amount of tonnage to be shipped daily. Based upon these advices, which are corrected and supplemented so as to be current information, permits are issued for the required tonnage. In some quarters the impression seems to prevail that once a permit has been issued no further action on the part of the railroad is necessary. This is a mistaken idea, for the issuance of the permit is only the beginning of the regulation. Checks must be established in the transportation department which will show the number of cars billed from each point of shipment, or received from a connection and charged against the permit. When the allotted tonnage has been shipped it must be seen that no further shipments are allowed to come forward. It is also necessary that a record be kept of the vessels reported to see that they arrive according to schedule, or others are promptly substituted.

The permit system may be applied with equal success in regulating ore and furnace material. Due to local conditions the permit system is sometimes necessary to control the flow of any or all traffic to any or all industries at a particular station.

Car Conservation

By J. W. James

St. Louis Southwestern, St. Louis, Mo.

The traffic department and the agent can render a real service by being more specific in the placing of car orders, indicating first, second, and if possible, a third choice. A shipper may order a box car for sewer pipe when it could be loaded in a stock car and frequently the same thing applies in other classes of equipment.

We should guard against wasting equipment. Frequently stock cars are on sidings awaiting repairs, not fit for live stock, but serviceable for rough freight at a time when box cars are furnished for sewer pipe, brick, etc., and when these cars could be used for freight of another character. The good salesman or merchant will do his utmost to first get rid of the product which is most difficult to move. By fitting the available equipment to the commodity, regardless of its condition, it is possible to serve a greater number of shippers, even under the present conditions.

An order for a car to load "pipe" is received. A good car distributor will find out whether it is galvanized pipe, sewer pipe or cast iron pipe before he delays cars and shipment by furnishing a leaky roof on assuming instead of knowing the commodity. If the car distributor gets an order for a car to load oats, he will ascertain whether in bulk or in sacks, for if in sacks, he can make a good grain car by saving the one that a careless car distributor would apply on the sacked oats, which did not require a first class grain car, but a fairly good car. Attention properly directed to such details will apply also to the order for a flat car where a drop end or low side gondola will be satisfactory, or where a 40 ft. 10 ft. high will answer the purpose of a 50 ft. box car of the usual dimensions.

The increase in car miles is not to come from any material change in loading or in speed of trains. It will come through the elimination of a division of responsibility in connection with car reports which should be designated in the future as daily car delay reports. We should begin without further delay to deal in car hours instead of car days, and analyze car movement with practically the same detail as is present practice in the movement of the locomotive.

To obtain satisfactory information as to the delays generally in the train or transportation yards arrangement should be made to take one train in each direction daily (not including preferred freight runs) and with the list of cars in these trains, run the car record and it will give an average delay per car for ordinary freight in that particular yard. A

weekly review of the daily station performance furnished to all stations on the division will stimulate interest, especially in view of the similarity of conditions and the numerous classifications arranged in connection with delays. A review prepared each month by division will bring forth additional interest and co-operation from officers. Comparison for all terminals of the performance of car repair departments will be equally beneficial and will enable the officers to determine quickly whether the cost of per diem is offsetting an economy effected in reduction of forces or not planning sufficiently in advance for material required.

Three Sub-Divisions

By M. M. Eidson

General Car Accountant, Wabash Railway, St. Louis, Mo.

Plans designed to increase miles per car per day may be subdivided under three headings:

1. Reduction in per diem expense: Remedy: (a) Properly carding cars on arrival at terminals. (b) Supervision in handling through business in classification yards. (c) Checking bad order tracks, arranging for transfers and repairs. (d) Checking hold and industrial tracks, analyzing conditions contributing to delays. (e) Delivering all business, including empties, to connections before midnight. (f) Insist on patrons loading and unloading cars promptly.

2. Distribution efficiency: Remedy: (a) Reload cars, when possible, on tracks where made empty, equalizing periodically. (b) Prevent backhauls or crosshauls. (c) Secure accurate check daily as to requirements, also check cars divided by classes and properly inspect and card those available for loading.

3. Inspection and repairs: Remedy: (a) Inspect cars and prevent setouts between terminals account of hot boxes, etc. (b) Hurry inspection of both loaded and empty cars going to connections. (c) Maintain a supply of material necessary to properly repair cars.

Attention to Many Details

By T. W. Blake

Secretary to Vice-President, Pennsylvania Railroad, Pittsburgh, Pa.

The delay to loaded and empty freight cars may occur at origin, in yards, on the road and at destination. At the point of origin a road may require mines and loading points to finish up their loading daily wherever possible. Switch industrial and mine tracks as soon as possible after the day's loading and despatch the cars. Move cars in solid trains or solid blocks from originating point to destination, or to yard nearest destination, whenever possible. Inaugurate the sailing day plan for freight stations which eliminates the handling of l. c. l. freight at transfers. Urge shippers to load direct to one destination or to combine two or more shippers in a district to make a solid car or solid train for one destination. There should also be close co-operation with shippers using trap and ferry-car service to encourage loading to destination direct.

A number of large railroad yards are equipped with air lines by which the air is pumped up on trains on advance tracks, initials and numbers of cars are taken by yard clerks and necessary information compiled for conductors to prepare reports for car record purposes, so that it is only necessary for the road engine to couple on the train and proceed. This reduces the initial terminal time in getting out of yards as well as the time required for cars to pass through yards. In some yards not equipped with air lines, it has been found economical to place make-up crews at work who assemble trains, and

do all the necessary shifting and yard work in order that the trains are ready for movement when the road crews report.

Review should be made of the classifications now required in various yards to determine whether cars are being held an undue length of time to accumulate tonnage for destinations. Make prompt repairs to shop cars and secure close co-operation between yardmasters and car shop foremen to insure shop cars being placed on shop tracks promptly after being marked bad order and pulled from shop tracks after being repaired. In a number of cases, cars are marked for shop tracks when defects are of a minor character which can be repaired while the cars are in the classification yards, without the necessity of moving to and from shop tracks with attending delay. Where space permits, tracks in repair yards should be set aside for light repair cars and where facilities do not permit of this being done, light repair cars should be set on the head end of repair tracks so that they can be removed promptly when repairs are completed, without being kept waiting for a shift of the entire shop yard of track to be made.

Stimulate competition between individual car droppers in yards, between various shifts in one yard and between different yards to increase the average number of cars handled per hour as well as to reduce the number of cars damaged in C. T. yards. Provide methods for the quick return of car droppers to the "hump" after riding out of cars. Load engines to tonnage capacity, due regard to weather conditions being observed at all times.

To insure minimum delays at destination make a close check on cars loaded with material for company use to see that they are loaded and released promptly by the officers involved. Encourage the loading and unloading of cars on Saturday afternoons and Sundays at plants having forces at work at that time.

Essentials of Safety Work*

By Harry J. Bell

IT IS PECULIARLY NECESSARY in the railroad business to organize for constructive and continuous accident prevention because you are required to contend with fast moving and very heavy machines; because the bulk of the hazardous operations are carried on out of doors, under all conditions of weather; and because the working force, being distributed over a wide range of territory, is not amenable to intensive supervision as in most other industries. The report of the Interstate Commerce Commission for 1918 shows a total of 24,695 train accidents with a resultant damage to railway property alone amounting to \$20,954,350. The expenditure of railways that year for personal injury and death claims amounted to \$33,369,199. These stupendous totals demand that every man in railroad service manifest an earnest interest in accident prevention; for these items represent a direct economic waste, a large proportion of which is unnecessary and wholly preventable.

Destruction by fire in the United States last year reached the enormous total whereby it cost 20,000 lives and \$325,000,000. Fire prevention is definitely related to accident prevention, for you cannot possibly educate a man to think and act along safe lines without educating him in fire prevention as well.

Before the advent of federal control many of the railroads had done little or no safety work, and, if they had any organization at all, it was for the most part a purely paper

organization. At the conclusion of federal control there were functioning approximately 1,800 safety committees, with a membership of 32,000; and their work resulted in a reduction in the year 1919, as compared to the preceding year, of 1,231 fewer employees killed and 26,962 fewer employees injured. These safety committees made during 1919 a total of 237,728 recommendations as to dangerous conditions and 84,963 as to dangerous practices, nearly all of which were corrected at a nominal cost or no cost at all. The impetus given this work by the federal government will be felt for many years, though some of the roads have not seen fit to continue this important work with the same degree of intensity as before.

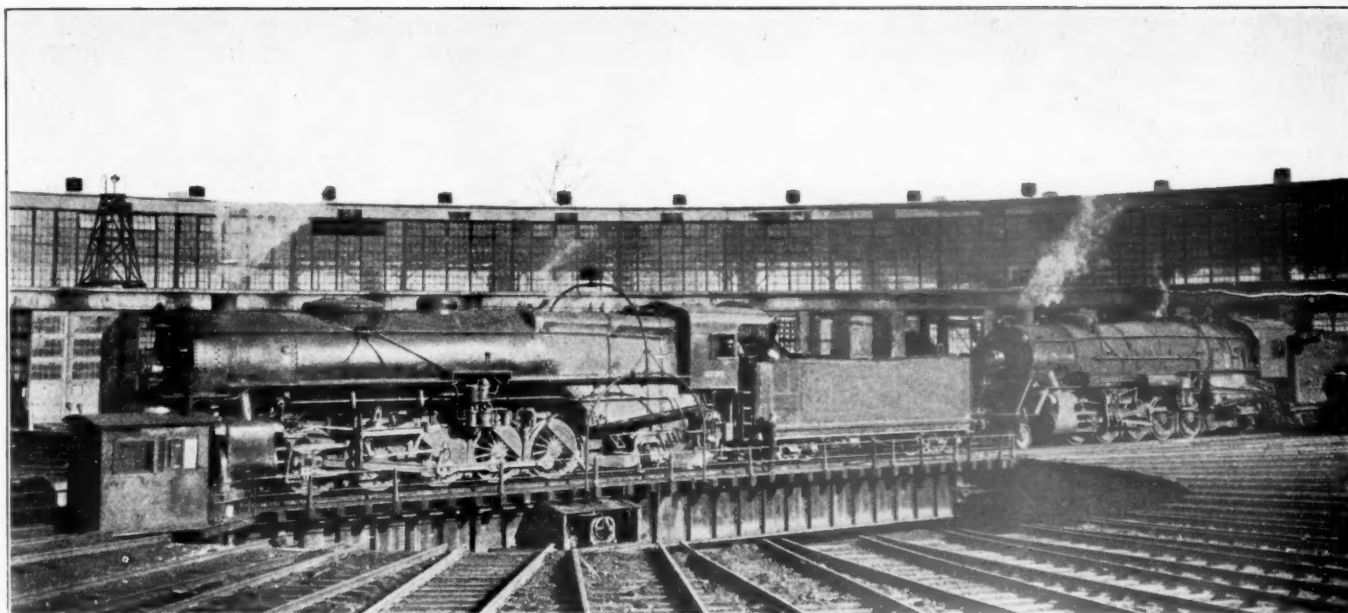
The safety committee meetings provide a point of contact between officers and employees, the value of which is inestimable; it makes the one group of men understand the problems of the other, promotes loyalty and brings about better feelings on all sides. The cost of the work by comparison with the saving effected is insignificant. It is my earnest belief that a really energetic safety organization pays larger returns on the investment than any other undertaking in which a railroad might engage.

In the Northwestern Region, 53,000 miles of railroad employing 290,000 men in 1919, there was a decrease of 253 persons killed and 4,040 injured, including all persons, as compared to the 1918 record. Based on what was regarded as a fair average cost of adjusting personal injury and death claims, this saving in casualties was estimated to represent a money saving in excess of \$1,000,000.

The railroad which makes a success of this work must do so by appealing to its employees from a strictly humanitarian standpoint; and also must make manifest that the management literally intends that it shall not be a matter of Safety First when it is convenient but Safety First under all circumstances. No man who does not have a proper regard for safety, no matter whether he is general manager or track laborer, is fair and right with himself, with his dependents, with his fellow employees or with his employer. The management, of course, must demonstrate its own interest in the work by complying with all reasonable and proper recommendations made by the members of the safety committees or, when that is not practicable, explaining to the men why the recommendations cannot be carried out. It must recognize that men are always infinitely more important than machines.

An intelligently conducted safety plan is bound to accomplish all that is claimed for it, thus making railroading not only a safer but a more desirable occupation and one that will attract to its service the highest grade of men. You must, however, from the very nature of the work consistently and continuously devise new plans and methods for developing and sustaining the interest of the entire official staff and working force. It will not suffice to merely beseech the men to stop deaths and injuries,—it is essential that they be kept constantly informed as to the number of casualties which occur and what causes them. Healthy rivalry between shops, terminals and divisions, developed by sundry competitive arrangements, is highly desirable. . . . Some of us are inclined to take for granted that nothing can be done to avoid trespasser and grade crossing accidents, but I believe that gratifying results in this direction are attainable by intensified effort. An instructive test of the efficacy of accident prevention work was made during the last two weeks in October, 1919, when the Railroad Administration conducted what was known as the national railroad accident prevention drive on all railroads under federal control, employing over two million men; in which 42 fewer employees were killed than during the same two weeks of the preceding year, and 2,731 fewer employees were injured. A comparable result over a longer period of time is altogether possible. . . .

* Extracts from an address by Harry J. Bell, secretary of the Chicago Safety Council, before the St. Louis Railway Exposition, October 27. Mr. Bell was formerly supervisor of safety, Northwestern Region, United States Railroad Administration.



Terminal Movements Constitute an Unwritten Page on Every Timetable

The Locomotive Terminal as an Operating Factor*

Any Broad Plan for Improvement in Operating Conditions Must
Include Terminal Development

By L. G. Plant

Associate Editor of the *Railway Age*

THE IMPORTANCE of the locomotive terminal as an operating factor lies clearly in the fact that both the quantity and the quality of work performed by every locomotive depends wholly upon the character of the attention which it receives at the end of the run. The most efficient locomotive may become wasteful or the most powerful locomotive be incapacitated by careless handling or neglected maintenance at the locomotive terminal. When we stop to consider that the average locomotive spends the better part of each day in the terminal and that its ability to render useful service during the remaining hours depends upon the care which it has received at the terminal, it must be evident that the locomotive terminal is a very live factor in the operation of any railroad.

The effect which a terminal can have upon the performance of every locomotive is so very obvious that any broad plan for the betterment of operating conditions must take into consideration the question as to whether a further expenditure in terminal equipment or improvement in terminal methods will not enable us to get more useful work out of our locomotives without a corresponding increase in operating expenses.

There has never been a time when the railroads have devoted more earnest consideration than they are now giving towards means for securing better operating results. It is well understood that the purpose of recent legislation and of advancing freight and passenger rates is primarily to enable the railroads to build up their operating organization and equipment to a point where they can easily handle the peak load at maximum efficiency. That is, plainly stated, the railroads will in the future be expected to do more than "get by" with a difficult situation.

Locomotive Terminal Improvement Is Imperative

The public will have little patience with the managements of our railroads if in the course of a few years it develops that a serious freight blockade or threatened coal shortage can be attributed to insufficient cars and locomotives or inadequate freight and locomotive terminals. Locomotive terminal equipment exclusive of the value of the real estate upon which it is situated cannot represent more than one per cent of the capital investment in the railroads. Yet upon the character of this equipment and the manner in which it is managed depends in a large measure the success with which all locomotives are operated. Locomotives represent about eight per cent of the capital investment, yet the service rendered to the public is directly dependent on their operation. Plainly, therefore, the railroads must be held strictly accountable if it becomes apparent that the service is impaired because of inadequate terminal equipment or lax terminal management.

We are today operating bigger locomotives than were thought practical 20 years ago and some of them are equipped with devices designed to increase the efficiency and capacity of the locomotive beyond what was considered possible ten years ago. But we are handling many of these locomotives through terminal lay-outs and in enginehouses that were designed over 30 years ago with small margin for subsequent development. Thirty or 40 years ago the locomotive terminal was hardly regarded as an operating factor; other causes determined the hours that a locomotive was available for service and there were fewer repairs required in the round-house because the locomotives were subject to less intensive operation, because all of their parts were much lighter and because of the willingness with which the engineers co-operated in those days in the maintenance of their locomotives.

This brings us to a consideration of what is now the func-

*The first part of a paper delivered before the New England Railroad Club on November 9, 1920. The remainder will appear in succeeding issues of the *Railway Age*.

tion of a locomotive terminal. It must, in the first place, afford adequate current maintenance. It may be possible and economical to concentrate the larger share of this burden at one of two adjacent terminals but there are few terminals at which locomotives can be regularly turned without requiring the attention of mechanics. It may also be anticipated that the inspection required by the government will grow more insistent, so that there are practically no locomotive terminals today in which adequate maintenance is not regarded as the foremost problem.

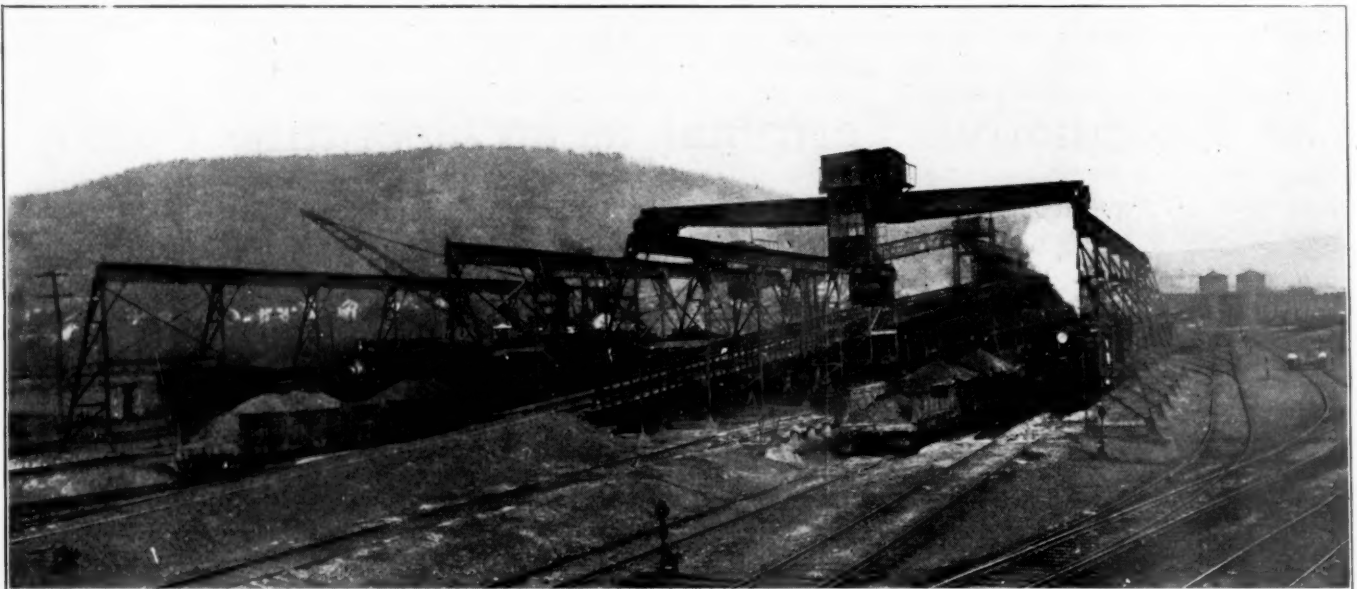
Function of the Locomotive Terminal

Generally speaking, terminal maintenance should be of such a character that the locomotives will continue to operate at full capacity and maximum efficiency between shoppings. Not only this, but the organization and facilities at every terminal should be adequate to keep all locomotive fuel and labor saving devices in working condition. Inability to maintain such devices properly with the terminal facilities on many railroads has been one of the most serious conditions tending to limit their full field usefulness. It is inevitable that locomotive terminals will be called upon to execute an

management and the terminal facilities at the disposal of the mechanical department are in most cases the controlling factors.

The cost of a locomotive is no index to what its actual value to the railroad company may be. If it is not a modern locomotive and the demands for power are such that it can be spared from active service it is valueless for the time being and should be stored for some future emergency. If on the other hand it is an efficient unit and the demands for power are pressing, it may easily be worth one hundred dollars for every hour that it is in active service. The value of locomotives will inevitably increase and with an era of intensive railroad operation before us, we are unquestionably facing the ultimate pooling of all locomotives.

One of the strongest arguments advanced in favor of electric traction lies in the capacity of the electric locomotive for long periods of uninterrupted service in the hands of a number of engineers and the steam locomotive must in some measure meet this condition if it is to survive among the fittest. These facts only serve to emphasize the tremendous importance of speed in terminal operation. The function of the locomotive terminal is not only a matter of maintenance,



Adequate Fire Cleaning Facilities Will Convert Idle Locomotive Hours Into Service-Hours

increasing variety of heavy repair work and it is imperative that they be so equipped that this work can be done without infringing on what may be described as the routine functions of the enginehouse.

The assignment of one or more stalls in a busy roundhouse to locomotives undergoing heavy repairs where the facilities are inadequate and the work consequently allowed to drag indicates a failure to comprehend the true function of a locomotive terminal. But, on the other hand, if the facilities are such that this work can be done expeditiously and economically this will do more than any other factor to prolong the useful service of locomotives between shoppings as well as lessen the ultimate maintenance cost.

The Value of a Locomotive

A locomotive is of value only when it is performing useful work and as it can only perform useful work when it is in service, it is startling to note how small a percentage of time locomotives on many railroads are in actual service even when traffic demands are very heavy. This is not necessarily a situation for which the mechanical department is responsible as the manner in which the power is despatched by the operating department may cause much lost time. But terminal

but the execution of repairs and the routine operations of fire cleaning, coaling, sanding, washing and so on, within the shortest possible time.

Significance of Prompt Terminal Movement

The significance of the prompt execution of these functions will be more fully appreciated when applied in principle to any railroad on which the demands for power are particularly heavy. Assuming that 1,000 locomotives are in service on an average of ten hours each day; if the terminal detention could then be reduced an average of one hour per day, this would be equivalent to an immediate increase of 100 locomotives in the number available for service of the road effecting the economy.

There are many railroads that may well pause before placing the next order for locomotives to make sure that the same expenditure if invested in terminal facilities would not actually be equivalent to adding a greater number of locomotives. This should not be construed as an argument against the purchase of new locomotives with greater capacity and increased efficiency any more than it could be regarded as an argument against the modernization of existing power for the sake of improved efficiency and capacity. It is contended,

however, that terminal improvement should precede rather than lag behind locomotive development.

It is the physical equipment, the organization and management of the terminal that determine its capacity to fulfill these important operating functions. Each new terminal development presents a unique problem which can best be solved by engineers acquainted with local conditions. There are, however, certain salient features in the make-up of any locomotive terminal that are so vital to successful operation that some discussion as to the character of the facilities which should be required for new terminal development may properly be incorporated in this paper.

Essentials of Terminal Equipment

The essential features of locomotive terminal equipment may be roughly divided into outside equipment including the track lay-out, fire cleaning facilities, coal chutes and sanding apparatus; and the equipment which is distinctly a part of the enginehouse and adjacent shops. Where lack of foresight has not set a limit to the space available for expansion, trackage should be expanded to the fullest extent possible. A single track lead over which locomotives move to and from the roundhouse is inexcusable. Where trackage is ample, a well-defined routine for the movement of every locomotive can be strictly adhered to. With three or more tracks available, a majority should ordinarily be assigned to in-coming locomotives. As a general rule a number of short leads are preferable to a single long lead as this enables one locomotive to move independently of other locomotives. Where the number of leads is restricted, frequent cross-over switches should be placed so as to reduce the liability of blocking the movement of any locomotive.

From an operating standpoint, the relative merits of various means for coaling and sanding locomotives may be gaged principally on the basis of reliability and capacity. Since the operation of these facilities reflects an operating charge, it may be well to consider the relative cost of operation but this is not a circumstance to the necessity for reliability in operation and capacity, not only for the total daily quantities of coal and sand, but for the number of tracks served. While there may be some advantage in locating these facilities so that coal and sand may be taken together, there is apparently no real necessity for this as it is not usually practical to deliver both coal and sand without moving the locomotives during the operation.

The arrangement of fire cleaning facilities and ash handling apparatus is undoubtedly the most vital feature exterior to the enginehouse. Whereas the time consumed in taking coal and sand can hardly be in excess of ten minutes, the time over the ash pit may easily consume one or two hours unless this movement is subject to the strictest supervision and the facilities are reasonably adequate. And yet these facilities at a very large number of so-called locomotive terminals are of the most meagre and primitive character.

Important Details in Terminal Equipment

No single feature about the terminal shows a greater variety in design than the locomotive ash pit. While we are accustomed to everything from an ordinary stretch of track on which the ashes are unceremoniously dumped, to extensive subterranean vaults from which the ashes are removed by mechanical conveyors, I am inclined to think that the water pit with a single gantry crane spanning three or four locomotive tracks and a single cinder loading track will prove to be the ultimate type best suited to meet the demands of intensive terminal operation. The transverse pit serving several tracks is preferable on general principles to the longitudinal pit serving but one or two long tracks. It may be stated that in the most recent terminal projects where space could not be regarded as a limiting factor, short transverse water pits serving three and four locomotive tracks are decidedly

in vogue. In any event, the locomotive ash pan should be accessible to fire cleaners working on either side of the locomotive. This may be accomplished on water pits by spacing the locomotive tracks close enough together so that light movable platforms may be used between them or by providing an individual water pit with each locomotive track that is spanned by the crane.

Against the possibility of a break down on the part of the ash pit crane, a locomotive crane should always be available. In fact, the locomotive crane, ready for any emergency and capable of doing many things must be regarded as indispensable to the operation of any real locomotive terminal.

The washing of locomotives with oil, water and compressed air appears to be an accepted time and labor saving practice. Some of the best results observed in cleaning locomotives by this process, are noted at terminals where during the day shift every incoming locomotive is washed off en route from the ash pit to the enginehouse. Two men were engaged in the operation which ordinarily does not delay the locomotive to exceed five minutes. This method would seem to have advantages over the practice of washing locomotives periodically and doing this in the enginehouse.

Charring Does Not Preserve Wood

ACCORDING to the United States Forest Products Laboratory, Madison, Wis., charring is of little value in protecting the butts of fence posts and telephone poles from decay. This is shown by service tests made by the laboratory on fences of charred and untreated posts of various species. The charred posts proved in these tests to be less durable than the untreated ones.

Theoretically, an area of charred wood around a post should prevent decay, because charcoal does not decay or encourage the growth of fungi, but the charred area around a post is not usually a solid covering, for it is checked through in many places. If posts are seasoned before they are charred, the charring does not reach to the bottom of the season checks which are always present. If green unchecked posts are charred, checks will open through the charred part as the wood seasons. In either case the uncharred center of the post is exposed to fungus infection and will decay as rapidly as any untreated wood. Charring deep enough to resist decay would undoubtedly weaken a post of ordinary size.

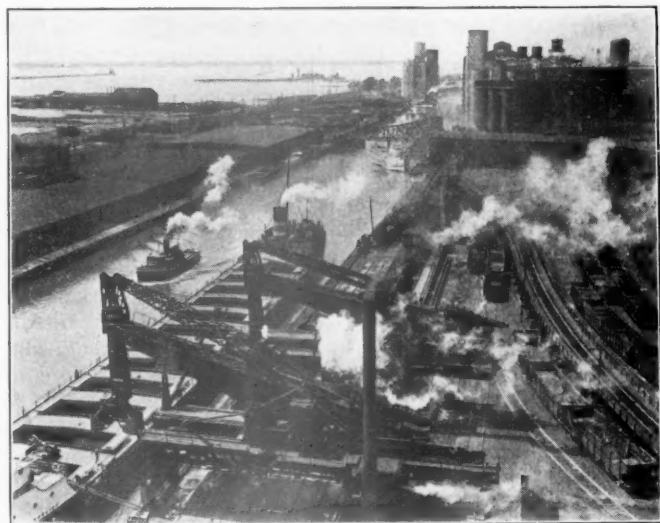


Photo by Ewing, Galloway, N. Y.

Docks, Elevators and Railway Yards at Buffalo Harbor

Annual Convention of State Railroad Commissioners

Resolutions Adopted on Co-operation with I. C. C.—Valuation Law Amendment Urged—Committee Reports

THE ANNUAL CONVENTION of the National Association of Railway and Utilities Commissioners adjourned after a four-day session at Washington, D. C., on November 12, deciding to hold the next annual convention at Atlanta, Ga., on October 11, 1921. The addresses made during the first day's session were reported in last week's issue. The succeeding days were devoted to the presentation of committee reports, and to round-table conferences on subjects of interest to the commissioners. Representatives of 28 states were in attendance.

Following the election of officers President-Elect Perry of Georgia spoke at some length upon the present crisis in state regulation. He criticised the tendency towards centralization of control over railroad rates in the Interstate Commerce Commission and declared that the public, and the railroads as well, would benefit greatly by a restoration of complete state regulation as it existed prior to 1914. He also expressed the belief that if the new transportation act is interpreted as destroying state control over rates the people of the country will see to it that Congress changes the law so as to recognize fully the rights of the states. A large part of the discussion was devoted to questions as to how far the state commissions may go in the exercise of their various functions in view of the enlarged authority of the Interstate Commerce Commission and a large part of the time of the meetings was devoted to the consideration of public utility matters as distinguished from those pertaining to railroads; more than at previous conventions.

Resolutions

The executive committee, to which was referred several recommendations contained in the annual address of President W. A. Shaw, reported several resolutions based thereon, which were adopted. One provided for the appointment of a committee of three to consider the possibility of preparing a digest of the laws of the several states governing public service and railroad commissions. Another provided for the appointment of a committee of seven on litigation, with F. W. Putnam, of Minnesota, as chairman, to represent the association in regulation matters that come before the courts, particularly the expected litigation involving the question of discrimination in intrastate state rates against interstate commerce.

Another resolution declared that the association is desirous of doing all that can be done by it to promote genuine co-operation between the state and federal authorities exercising regulatory jurisdiction over common carriers and expressing the judgment of the association that in order that the maximum benefit may be derived from the co-operative provisions of the act it is desirable that it should be understood in what classes of cases co-operation between state and federal authorities is deemed feasible by the Interstate Commerce Commission and, with respect to each such class of cases, whether by conference or by joint hearing. The president, vice-president, executive committee and general solicitor were authorized to represent the association at a conference with the I. C. C. and to make recommendations to the several commissions and to the next convention of the association.

Another resolution recommended the continuance of the office of general solicitor at Washington and generous financial support thereof by the several state commissions.

A resolution was adopted endorsing the amendment to the valuation act proposed in bills which have been introduced

in Congress, by Senator Cummins and Representative Esch, to strike out the words in the act which were involved in the Kansas City Southern case in the Supreme Court, requiring the Interstate Commerce Commission to report separately the original and the present cost of condemnation and damages or purchase in excess of original cost or present value of railroad land. The resolution urged upon Congress the prompt passage of the amendment. It declared that the effect of this requirement of the act will be to require the commission to retrace its steps, at the cost of much money and long delay, and to make investigations and gather data to enable it to make the required estimate as to the lands of carriers.

Car Service

Commissioner Aitchison's address on car service, reported in last week's issue, aroused a lively discussion, in which F. H. Funk of the Illinois commission, Judge Reed of the Kansas Court of Industrial Relations, and Charles Webster of the Iowa commission, took issue with some of the views expressed as to the respective functions of the state and federal commissions.

Judge Reed criticised the rules for the distribution of grain cars as between shippers, which he said the railroads claimed had been approved by the Interstate Commerce Commission. Commissioner Aitchison said the commission had not approved the rules except that they were based upon rules prescribed by the commission in an order in the South Dakota case (which had expired), made to meet a particular case involving discrimination by state rules against interstate commerce, and that in the later Tanner case the commission had merely laid down general principles. It refrained from prescribing rules, in order to allow the shippers, carriers and state commissioners an opportunity to agree on suitable rules. He said there should be no difficulty about getting uniform rules for both state and interstate traffic.

Commissioners Lewis, of Indiana, and Funk, of Illinois, expressed a desire to work in harmony with the Interstate Commerce Commission but wanted to know how far the federal commissioners intended to go in regulating local car service matters and how far they intended to let the state commissions go. Chairman Clark suggested that the commission could be judged by its past record, which has been along the line of encouraging local determination of matters on which it was possible to reach an agreement; the commission has enough work to do without looking for trouble. When Mr. Lewis suggested that if a state adopted reasonable rules for car distribution it would probably have no trouble with the Interstate Commerce Commission, Mr. Clark said that would depend upon how the rules worked and whether its jurisdiction was invoked by a complaint. Both he and Mr. Aitchison made it plain that if it became necessary for the federal commission to enter the field of regulating car distribution as between shippers, as distinguished from general car distribution, as between sections of the country, its regulations would be paramount. They offered little encouragement to the state commissions to prescribe rules of their own; but the federal commission has no idea that it alone can suggest the best set of rules; it would much prefer to have the railroads and the shippers agree locally on a fair plan of car distribution; and this has been done in many instances in the past. They also intimated that the Interstate Commerce Commission would probably not attempt to act unless on a complaint involving discrimination.

Commissioner Funk, of Illinois, said that his commission was in some doubt as to what to do because the attorney general of Illinois had given an opinion that the I. C. C. has jurisdiction over car service matters which is paramount if it enters the field, and he asked if the commission could not issue an official statement of its position.

Car Service Agents to Be Appointed

Chairman Clark said the commission does not need to apologize for what it has done or has not done; emergency conditions confronted it before it had time to organize its Bureau of Service. The commission plans to establish car service agents in various sections throughout the country with which it hopes to affiliate the local committees that were created to deal with the congestion conditions. It is now awaiting the results of civil service examinations for these positions. The local committees had performed a splendid work and it was desired to continue their functions.

Mr. Funk suggested that these committees be given a jurisdiction wider than the terminal districts of large cities in order that they may pay some attention to conditions at the country stations. Mr. Aitchison said this was a good suggestion and would be followed as far as practicable; but when A. E. Helm, of Kansas, suggested that the state commissions instead of local committees be used as the local agents of the Interstate Commerce Commission there was no response. Mr. Helm said that the state commissions are fully qualified and that the shippers would be better satisfied if car distribution and such questions were handled by the state commissions than by committees.

O. H. P. Jacobsen, of Minnesota, said that during the grain season the western roads ought to have considerably more than 100 per cent of their cars. Commissioner Aitchison asked if the time has not passed when the railroads should be expected to move the entire grain crop as fast as it is produced and if the remedy does not consist in better local storage facilities. Mr. Jacobsen agreed heartily with the idea of storage facilities but thought they ought to be built by the eastern railroads and said he had been trying to get a bill through Congress for that purpose. Judge Reed said the railroads have not been able to move the Kansas grain fast enough to fill up the storage capacity in Kansas City.

Coal Car Supply

The discussion then turned to the coal situation. In reply to a question regarding the assigned-car rule for railroad fuel Mr. Clark said that railroads could not be compelled to distribute cars for railroad fuel equally among their mines because all mines do not produce coal suitable for railroad fuel; and those having no obligation to sell to a railroad cannot be forced to do so. The commission had permitted public utilities to use the assigned-car privilege so that they might get coal for their current needs, but not to increase their stores of coal; but many had used it to increase their storage supply and others had dishonestly diverted their priority coal to other uses. For that reason the order was withdrawn.

Commissioner Ainey, of Pennsylvania, asked that consideration be given to a letter from G. W. Elliott, chairman of a committee representing the public utilities, saying that the rescinding of the priority order had threatened the utilities with a calamitous situation because they cannot get their contract coal. Mr. Aitchison said the commission had not received a single complaint from a utility setting forth a case calling for the commission's help, since the order was withdrawn. The withdrawal was made necessary because the order had been prostituted. For 60 days the public utilities had been permitted to draw sight drafts on the car supply, for any mine with which they had contracts and to take the cars away from some other mine; and during that time they had received all the coal they needed for their daily use as

well as some for storage from the ordinary allotment of cars. As indicating the abuse of the privilege, Mr. Aitchison said that the daily average of cars loaded with coal for utilities in three districts had exceeded the average daily consumption of all the utilities in the United States.

The commission is ready now, he said, to see that coal moves to the necessitous public utility, even if it has to be moved on passenger trains, but it is unwilling longer to bribe the greedy coal operator (who has refused to live up to his contracts and has preferred to sell his coal elsewhere at a higher price) by giving him an extra supply of cars. If any utility cannot get its coal, he said, let it bring its mine operator to the commission, which will see that the railroad man also comes before it and that the mine gets its fair share of cars; but the operator must show what he has done with the coal he had already had the cars for and whether he is now entitled to more than his share. Most of these cases resolve themselves into a question of price, Mr. Aitchison said, because the coal has been and is being produced. Price is not a transportation emergency in the meaning of the provisions of the law that authorize the commission to exercise its emergency powers. The commission has no power to force a coal operator to ship his coal to those with whom he has contracts and the time is past for bribing him to do so by giving him a full car supply at others' expense.

H. M. Aylesworth, representing the National Electric Light Association, urged the commission to revise its priority order for utilities and make it mandatory, saying that the utilities are in a dangerous condition and not one in a hundred has received a car of contract coal since the order was withdrawn. He said they could get coal at high prices but that they had been urged by the federal bituminous coal commission to contract for their reserve supplies in advance, and have done so. Mr. Elliott, however, said that the utilities are not asking the commission to enforce the delivery of contract coal, but only that the provisions of Service Order No. 21 for issuing permits for utilities in serious need of coal be made to function. He said the order had not yet been used in any case to get coal for public utility. He said it was impossible to get the operators to come to Washington, as Mr. Aitchison had suggested.

Commissioner Smith, of Michigan, offered a resolution urging the Interstate Commerce Commission to take action to insure the public utilities the supply of coal needed to carry out their obligations, but several speakers opposed it and it was referred to the executive committee, which took no action.

Committee Reports

The Committee on Safety of Railroad Operation, C. C. McChord, chairman, presented a report devoted mainly to a discussion of the properties of steel rails.

The Valuation Committee presented a special report on a resolution proposed at the 1919 convention by Commissioner Haynes, of Indiana, declaring that more weight should be given in valuation to the "honest and prudent investment" and less weight to the cost of reproduction. This resolution had been sent to each state commission for expressions of opinion. Twenty-one of the commissions replying favored the resolution, two were unfavorable, four were non-committal and seven gave no expression of their attitudes. A summary of the replies was given in the report of the committee which was of the opinion that no formal action is necessary or desirable. After discussion the matter was referred to the valuation committee with instructions to report at the next convention.

The Committee on Express and Other Contract Carriers by Rail discussed the recent history of the express business, but said it was greatly handicapped in making intelligent observations because the Interstate Commerce Commission has not yet either approved or disapproved the express consolida-

tion; the shippers and state commissions "will await with bated breath" the decisions of the commission on this important matter. The committee did not hesitate to say that it would be an outrage for a consolidation to be approved before such arrangements are made as will insure to any person having a claim against any predecessor company an opportunity to bring suit thereon in the courts of the state where the claim arose.

The report of the Committee on Rates was a long discussion by J. F. Shaughnessy of the Nevada Commission.

Valuation

The report of the Committee on Valuation consisted largely of a review of the progress of the valuation work of the Interstate Commerce Commission. Prior to November 6, 1919, the Interstate Commerce Commission had served 55 tentative valuations. During the past year it has taken evidence upon carriers' protests in 20 other cases, of which 19 have been argued, or submitted without argument, and are now under consideration. No final valuation has been reported in any of these cases and no tentative valuation has been served since November 9, 1919. The reason for the failure to serve additional tentative valuations is said to be found in the Kansas City Southern litigation. The report states that, according to Director Prouty, the field engineering work will be completed by June 1, 1921; the field land appraisal work, not including estimates of cost of condemnation and damages in excess of present cost or present value, will be completed in all districts except the Southern by July 1, 1921, and in the Southern some time within the year following; and the accounting work in all districts will be completed by January 1, 1922. The report reviews the history of the Kansas City Southern case, saying that while the case was pending in the lower courts the commission appeared to have paid no attention to it, but after the argument of the case before the Supreme Court no further valuations were promulgated. What influenced the commission in advance of the decision of the court to suspend the promulgation of valuations, the report says, is not known, but it was commonly remarked at the time of the argument that questions from the bench foreshadowed the opinion of the court which was later handed down. It became necessary, the report says, for the commission to retrace its steps and gather the necessary data to enable it to comply with the law as interpreted by the court. It is understood that thus far the investigation made by the commission has been confined to two cases, the San Pedro, Los Angeles & Salt Lake, and the Kansas City Southern. The estimate which the commission will make on this point, the report says, will be wholly useless, or worse than useless, because if it is used to increase the value for rate purposes it will, to the extent of such use, be destructive of rights of the public which existed before the valuation act was passed. Following the Supreme Court's decision members of the legislative and valuation committees of the association held a conference, at which it was determined to make requests of the appropriate committee chairmen in Congress to bring about an amendment of the valuation act by eliminating the requirement that the commission report an estimate of the cost of condemnation and damages. Upon consideration, Senator Cummins and Congressman Esch promptly introduced bills to effect the desired amendment; but, owing to the adjournment of Congress shortly thereafter, no action was taken.

From the beginning of valuation work the association has taken the position that the valuation act does not require or authorize the finding of a single sum stated as the value of the property, but the committee says that the question as to the intent of the original act has now become a matter of academic interest merely, because language was included in the transportation act evidently designed to confirm the commission's decision to report a finding of the final value. The

act also makes it the duty of the commission to find the value of carriers' properties proposed to be consolidated and, the committee says, it is now beyond question the duty of the commission to find a final value. It is understood that the commission, when it amends valuations, heretofore served, by adding its estimate of cost of condemnation and damages, will also amend the same by a finding of final value.

The report also includes a discussion of the rate-case proceedings relating to the temporary valuation of the roads. It says it is proper to assume that the Interstate Commerce Commission, confronted with a situation where substantial rate increases were obviously immediately necessary, applied the statute as well as it could and determined the aggregate value of property in each district somewhat summarily. Of this procedure, the committee says, no criticism should be made because, confronted with a great task, the commission did all that time permitted, but it is assumed that the aggregate value thus announced will not be permitted to affect the future findings of the commission as to the value of particular properties. When the Bureau of Valuation has completed its field work and put into shape all completed engineering, lands and accounting reports, the committee says, "we shall still be far from having a valuation of the railroads of the country, and how many years it will require to prepare tentative valuations and litigate the countless questions of law and fact that will be raised by carriers, nobody can predict." The carriers, it says, are endeavoring to secure a valuation made upon principles, which, if applied, will produce valuations so largely in excess not only of the actual investment, but in excess of the economic worth of the properties, that earnings thereon cannot be made. If they succeed, even under constitutional rules, the power of regulatory authorities, both state and federal, to regulate the quantum of rates collected will have been destroyed.

The Committee on Grade Crossings and Trespassing on Railroads expressed the opinion that now that the railroads have been turned back to their owners and have been given rates "sufficient to enable them to properly function," the time has arrived when all the state commissions should again take up the plan of grade crossing protection approved by the association in 1917 and carry it into execution.

The committee made an additional recommendation that the state commissions secure, in all the states, the passage of laws requiring every automobile which goes over a railroad crossing which is not protected by gates or a flagman to come to a full stop before crossing the track. It also recommended that the commissions secure the passage, in all states, of laws making it a misdemeanor for any person to trespass upon railway tracks; and that all commissions undertake a campaign for the enforcement of such laws when they are enacted.



Photo by International

Hospital Train Sent by the Belgians to Poland, in Station at Brussels Just Before Leaving

Lehigh Valley Plan for Selling Stock to Employees

Reason for the Plan—Methods Used in Deducting Installments from Payroll—The Results

By A. F. Bayfield
Treasurer, Lehigh Valley

IN THE EARLY PART of June of this year, E. E. Loomis, president of the Lehigh Valley, addressed to the employees a pamphlet containing various interesting facts relating to the operation and finances of the Lehigh Valley Railroad, with a view to restoring the co-operation of the employees and getting back to the former relation of officers and men which in the old days had been somewhat of the nature of a happy family. Incidentally, he suggested the possibilities of the railroad stock from an investment standpoint in the following language:

"On June 1 a \$50 share of Lehigh Valley stock was selling for \$43. The dividend on this share is \$3.50 a year,

stock on an installment plan along similar lines to those which had obtained during the Liberty Loan campaign. Accordingly, the following plan was outlined and submitted to the employees:

The Plan

First—Employees may purchase one, two, three, four, five, ten or twenty shares of the common stock of the company.

We have a blank form of application which the employee fills out showing the number of shares desired, his full name, address, division, and nature of work performed. This blank after being filled in by the applicant is handed to his superior officer, who arranges to fill in the payroll references, etc., to complete the identification of the applicant.

Second—The company will buy the stock at the market price on the day the subscription reaches the treasurer's office at Philadelphia, or as soon thereafter as possible.

The form of application previously referred to is forwarded to the treasurer's office and as soon as the order is received an acknowledgment of the order quoting the price and stating the deductions to be made on the payroll is mailed to the employee, a copy going to the division payroll office.

You will note that this stock is purchased on the open market and is, therefore, the ordinary common stock of the company, having with it all the privileges, such as voting powers, dividends, etc., which are common to all holders of the stock. It is not treasury stock, or stock which has restricted rights, such as is sold to employees of some industrial concerns. Those of us who are aware of the formalities required by the Interstate Commerce Commission and the various state authorities for the issuance of stock whether it be new stock or so-called treasury stock (which is not recognized as issued stock by the Interstate Commerce Commission) know how impossible would be the selling of such stock piecemeal.

Third—Deductions will be made monthly from the payroll for the second half of the month at the rate of \$5 for each share subscribed for.

As stated above, the treasurer reports to the payroll accountant on the division, the names of employees subscribing and the amount to be deducted monthly. After these deductions are made on the payroll they are abstracted and the abstracts forwarded to the general office, where the record of stock subscriptions is kept. The account with the subscriber is kept on the back of the application blank, which is ruled to record payments, interest calculations, date stock certificate is issued, certificate number, and this record is bound in a loose leaf binder. Several binders are used, one for each division, one for the general office, one for officers, etc.

Fourth—Stock will be held by the company and remain its property until the final installment is paid. Stock bought at \$43 a share is paid for at \$5 per month, would be delivered in about nine months.

You will note that this stock remains the property of the company until the final installment is paid and, therefore, any dividends paid on said stock belongs to the company. Interest, however, is allowed to the employees on their payments, as stated in the plan further on.

Fifth—Each installment paid by an employee will be

To be handed your superior officer for transmission to the Treasurer, Philadelphia

APPLICATION FOR PURCHASE OF Lehigh Valley Railroad Company COMMON STOCK

192.....

Please purchase for my account under the terms of the President's circular of June 22, 1920, shares of the common stock of the Lehigh Valley Railroad Company at the market price prevailing on the day this application reaches the Treasurer's office or as soon thereafter as practicable, with the understanding that installments are to be deducted from the earnings due me for the second half of each month at the rate of \$..... per share until the stock is paid for *

Information to be filled out by Department Head

Division Department.....

Last Pay Roll No.

Line No.

Recorded.....

Name of Employing Office

Name

Residence St.

City or Town County State

Occupation

Paid at

*Monthly deductions must be at the rate of \$5.00 per share or multiples of \$5.00 that is \$10.00 \$15.00, etc.

This Application Is in Duplicate. One Copy Is Sent to the Treasurer and the Other Kept by the Subscriber

or 7 per cent, but at the present price of the stock the return on money invested in the stock is more than 8 per cent. You know the property and its possibilities. Many of you may see in this an opportunity for an investment of your savings which will not only return good interest, but furnish a new incentive for your work."

This paragraph created widespread interest among the employees and numerous inquiries were received as to whether the company could not assist the employees to purchase the

* Abstract of paper read before the meeting of the Society of Railway Financial Officers at Richmond Va., November 10 to 12.

regarded as an investment and he will be credited with interest thereon at the dividend rate paid by the company on its common stock.

The method of computing interest is to allow the employee 7 per cent interest from the date of the payroll until the date on which he completes his payments. It so happens that the final payment generally is made between dividend dates. As stated above, the company absorbs all dividends received on the stock prior to the completion of the payments. After the employee has completed his payments he becomes the registered stockholder and when the next dividend is declared he will receive that dividend. Inasmuch as he has been allowed interest on his installments up to the date of the final payment, the company claims an equity in the first dividend received by the employee, and collects this equity by charging interest at 7 per cent on the par value of the stock from the date of the last dividend to the date of his final payment.

Sixth—The total amount due on the stock may be paid up at any time.

Seventh—Stock issued in the name of an employee will be delivered promptly upon completion of the final payment.

The stock is forwarded to the employee by registered U. S. mail.

Eighth—Once stock is paid for dividend checks will be mailed quarterly when declared. At the present 7 per cent rate dividends on each \$50 share amounts to \$3.50 per share annually.

If an employee leaves the service he can have his money refunded with interest or may pay in full and take his stock. Employees are not allowed to transfer their subscriptions, but, of course, can do what they like with the stock after they have paid for it. In this respect we differ somewhat, from the methods of industrial concerns which require employees to return their stock holdings when leaving the service permanently.

Employees will understand that there is no intention on the part of the management to urge them unduly to become stockholders of the company. The plan here offered is merely to afford those who desire to become part owners, as well as employees of the company, a chance to do so in an easy and convenient manner.

The Results

The results up to date have been as follows:

Total number of subscriptions—1,116, which is approximately $4\frac{1}{2}$ per cent of the total number of employees.

Total number of shares subscribed for 4,716. Of this number 134 employees who subscribed for 850 shares have completed their payments and so far only 14 of these 850 shares have been sold by them.

The subscriptions divided by classified employees are as follows:

Officers & gen'l. office employees, 549 or 19 per cent of this class.
Agents and station employees, 160 or 8 per cent of this class.
Eng'n, firemen, conductors, etc 67 or 1 per cent of this class.
Maintenance of equipment dept., 201 or 4 per cent of this class.
Maintenance of way department, 90 or $1\frac{1}{2}$ per cent of this class.
Miscellaneous, 47.

The results as above shown indicate that the men on the road who are strongly organized have not yet responded to the same extent as the officers and general office employees, but when the idea gets home to them we are sanguine that they will get in on this, which is a better method of gaining a proprietary interest in the road than by the strong-arm method advocated by Plumb propagandists.

It has been suggested that should the market drop the subscribers may become disgruntled, and while there is probably some merit to this suggestion (as nobody likes to lose money), nevertheless it would seem that any seasoned dividend paying railroad stock under present conditions can be considered

well out of the speculative list, and more what is usually termed "a gilt edged investment."

As an indication of the general interest taken in this subject, I have received messages from several newspapers asking me for copies of this paper. I will refer particularly to one communication from a New York financial paper, in which the editors say in referring to our plan that they feel that the time has come when such a plan should generally be adopted by leading corporations, one important reason being that those who so desire to invest may otherwise become the victims of salesmen who distribute questionable securities, and furthermore, they might also be led to patronize bucket shops, which make a practice of fleecing unsophisticated investors.

Selling of stock to employees on the installment plan is not a new one even with railroads, as this method has been in existence on the Illinois Central since 1893. The only fundamental difference in that company's plan and the Lehigh Valley plan is that employees on the Illinois Central are only allowed to buy one share at a time on the installment plan. An employee desiring to purchase more than one share may do so by paying cash in full for the number of shares that he desires and the Illinois Central has an arrangement to purchase such stock on the open market in order to assist the employees, who usually do not understand stock exchange methods and are rather shy of approaching a broker. I am indebted to M. P. Blauvelt, vice-president of the Illinois Central, for the following information:

During the month of October, 1920, that company received 92 applications, of which 40 were from men out on the line or in the shops, 36 were made by clerks in the general office and 16 were made by general officers. Inasmuch as the plan has been in use on the Illinois Central for so many years, its present results can be considered as normal and the showing is approximately 40 per cent from men out on the line, which I consider very favorable indeed. The Illinois Central keeps this plan in front of its employees continually through the medium of the monthly magazine.

We are rather enthusiastic on the matter and believe that if other roads adopt some such plan, it would be of benefit to all the railroads and their employees, and whatever benefits the morale of the railroad employee must be of benefit to the country as a whole.

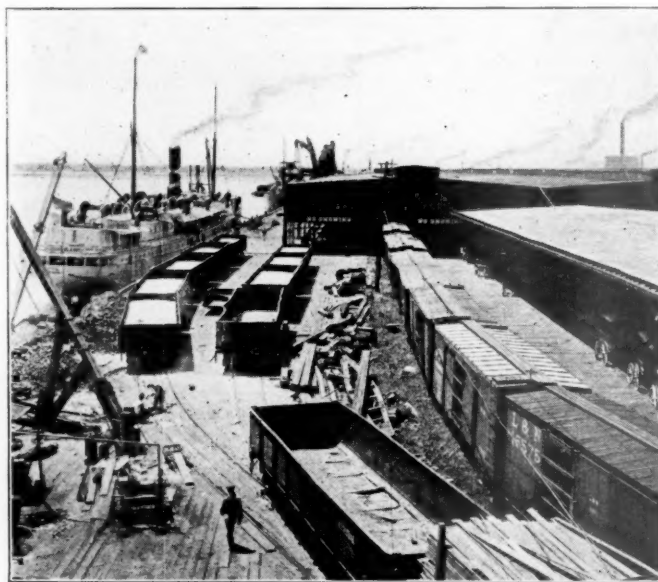


Photo from Ewing Galloway, N. Y.

One of the Large Railway Piers at New Orleans

Decline in Business Activity Shown in Loadings

Report Shows Decrease Due Principally to Reduced Loadings
of Miscellaneous Freight

WASHINGTON, D. C.

THE FALLING OFF in business activity, which has been reported from several sections of the country for several weeks, has at last reached such proportions as to affect the total freight car loading figures. After exceeding the million mark for three consecutive weeks in October the number of cars loaded with revenue freight dropped to 973,120 cars during the week ending October 30, according to the weekly reports compiled by the Car Service Division of the American Railway Association, while for the week ending November 6 it was 910,592. There had been some reductions in miscellaneous freight during the previous weeks and the grain and livestock loading had been less than for the corresponding weeks of the previous year. There had also been decreases in some districts but the total loading for three weeks in October was greater than for any preceding weeks this year. Despite the reduction in the week of October 30 the total number of cars loaded was 21,810 more than for the corresponding week in 1919, and 80,728 more than were loaded during the same week in 1918.

The decrease, the reports show, was principally due to a falling off, as compared with the preceding week, in the loading of miscellaneous freight, especially in the eastern district, which reported a reduction of 11,000 cars in this class of freight, the Northwestern district, which showed a reduction of 12,000 and the Southwestern district, which had a reduction of 3,000 cars. Decreases in the number of cars loaded with grain, livestock, coal, coke, forest products and ore were also shown as compared with reports for the previous week, but there were increases as compared with 1919 in coal, coke, forest products, ore and miscellaneous.

The report follows:

shortage was 55,412 cars, as compared with 65,965 cars for the preceding week, or a reduction of 10,553 cars. The freight car accumulations also show a further reduction to 32,665 for the week ended November 5.

For the week ending November 5 the shortage was only 39,688, of which 12,511 were box cars and 17,886 coal cars, while surpluses were reported amounting to 12,033.

The box car shortage in the west has virtually been relieved, reports received by the Car Service Division show. There has been a noticeable lessening in the demand for box cars in that part of the country, which would indicate that requirements are quite generally being met. An actual surplus was first reported by railroads in Texas but since then the same conditions have gradually spread to the extent that it may now be said there is available box car equipment under present conditions to meet transportation requirements. Surplus cars, however, continue to be sent to spots still showing a shortage.

Under orders issued by the Car Service Division and the Interstate Commerce Commission empty cars were sent west for the purpose of increasing the car supply in the grain loading districts. Some of the western roads to which these cars were being sent, however, have now indicated that conditions are much improved and that further general relocation of equipment to that territory can be stopped except to return their own cars to them.

In view of this situation, the present time offers a favorable opportunity for such industries as require raw material which moves seasonally under usual conditions to advance such movement somewhat while there is available transportation.

Continued progress is also being made in the "unscramb-

REVENUE FREIGHT LOADED AND RECEIVED FROM CONNECTIONS

SUMMARY—ALL DISTRICTS; COMPARISON OF TOTALS, THIS YEAR, LAST YEAR, TWO YEARS AGO, FOR WEEK ENDED SATURDAY, OCTOBER 30, 1920

Districts	Year	Grain and grain products	Live stock	Coal	Coke	Forest products	Ore	Mdse. L. C. L.*	Miscellaneous	Total revenue freight loaded			Received from connections		
										This year, 1920	Corresponding year, 1919	Corresponding year, 1918	This year, 1920	Corresponding year, 1919	Corresponding year, 1918
Eastern	1920	5,830	2,803	57,407	3,504	8,052	10,631	50,661	94,660	233,548	222,840	218,917	255,224	246,959	240,598
	1919	6,641	3,787	51,137	3,324	7,257	5,991	27,552	117,151	211,526	201,498	198,653	143,174	143,452	174,258
Allegheny	1920	2,131	3,536	69,777	7,203	4,074	12,191	39,286	73,328	211,526	201,498	198,653	143,174	143,452	174,258
	1919	2,743	3,452	65,179	4,024	4,220	9,513	42,476	69,891	211,526	201,498	198,653	143,174	143,452	174,258
Pocahontas	1920	96	275	24,468	733	2,036	257	2,689	7,192	37,746	40,437	35,059	19,091	21,138	24,855
	1919	221	326	27,014	646	2,002	330	156	9,742	40,437	40,437	35,059	19,091	21,138	24,855
Southern	1920	2,606	2,213	28,537	1,600	18,796	2,963	38,026	36,990	131,731	131,526	113,728	75,167	75,174	72,109
	1919	3,036	2,854	26,976	318	17,225	2,563	19,761	58,793	131,526	131,526	113,728	75,167	75,174	72,109
Northwestern	1920	13,102	9,359	11,014	1,802	15,799	39,280	30,867	35,640	156,863	140,515	147,970	59,001	62,453	76,234
	1919	12,691	10,819	15,638	702	14,785	20,415	21,783	43,682	140,515	140,515	147,970	59,001	62,453	76,234
Central Western	1920	9,464	11,564	25,555	472	5,565	2,718	31,138	49,869	136,345	139,200	122,578	68,759	66,886	64,925
	1919	10,646	16,562	23,715	424	5,971	2,477	25,274	54,131	136,345	139,200	122,578	68,759	66,886	64,925
Southwestern	1920	3,438	2,347	7,945	137	6,815	176	16,663	27,840	65,361	59,463	55,487	49,815	50,897	45,293
	1919	3,806	3,396	7,366	118	5,512	353	12,709	26,203	65,361	59,463	55,487	49,815	50,897	45,293
Total all roads...	1920	36,667	32,097	224,703	15,451	61,137	68,216	209,330	325,519	973,120	935,479	892,392	670,231	666,959	698,272
	1919	39,784	41,196	217,025	9,556	56,972	41,642	149,711	379,593	973,120	935,479	892,392	670,231	666,959	698,272
	1918	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Increase compared, 1919	1919	.....	.....	7,678	5,895	4,165	26,574	59,619	.....	37,141	.....	.....	3,272	.....	.....
Decrease compared, 1919	1919	3,117	9,099	.....	.....	.....	.....	.....	54,074	.....	.....	.....	.....	.....	.....
Increase compared, 1918	1918	.....	.....	.....	.....	.....	.....	.....	.....	80,728	.....	.....	28,041	.....	.....
Decrease compared, 1918	1918	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

*L. C. L. merchandise loading figures for 1920 and 1919 are not comparable as some roads are not able to separate their L. C. L. freight and miscellaneous of 1919. Add merchandise and miscellaneous columns to get a fair comparison.

For the week ending November 6 there was an even greater reduction in the loading, to 910,592 cars, but this figure still represented a large increase as compared with 826,724 cars loaded in the corresponding week of 1919 and 873,854 in the corresponding week of 1918, and there was an increase in every district as compared with 1919.

A further decrease in the car shortage was also shown for the week which ended on October 30. The average daily

ling" of freight cars, which from the standpoint of ownership as well as of traffic were widely distributed during the period of federal control. On November 1 the total of all cars on home lines was 31.3 per cent, a gain of 1 3/10, or about 30,000 cars as compared with October 1. The principal gain for the month was in the number of box cars returned, which showed an improvement of 2 1/10 per cent over the previous month. When the government turned the

roads back on March 1 the number of cars on home lines was only 2.19 per cent as compared with 44 per cent when federal control began on January 1, 1918. Under normal conditions the number should be about 50 per cent.

Coal Production

The total output of soft coal during the first week of November is estimated by the Geological Survey at 11,355,000 net tons. Preliminary reports, the bureau says, indicate a heavy production during the week of November 13. Production during the first 264 working days of the year has been 464,331,000 net tons, a little more than 40 2/3 million tons behind 1918 but 59 million tons ahead of 1919. The production for the last week of October was 12,418,000 tons, according to the revised figure. The loss ascribed to transportation declined slightly, to 20.6 per cent of full time. There was a further decrease in the dumpings of bituminous coal at Lake Erie ports during the week ended November 6 and the cumulative lake movement from the opening of the season now stands at 20,893,000 net tons, which is about 4 1/4 million tons behind the record of 1917, 7 1/4 million behind 1918, but little more than a million tons behind the record of 1919.

For the first time in a month the railroads during the first week in November reported a production of less than 12,000,000 tons of bituminous coal. This, however, was not due to any shortage in the car supply but to election day on November 2 and the celebration of religious holidays in the coal fields. As a result, bituminous coal production for the week which ended on November 6 was estimated at 11,300,000 tons, a decrease of 1,038,000 tons or 8 per cent as compared with that for the previous week. Including railroad fuel coal, 202,564 cars were loaded with bituminous coal during the week, a decrease of 20,453 cars as compared with the previous week. Reports show, however, that except for the first two days of the week, the number of cars loaded daily with coal was greater for the remainder of the week than for the corresponding days of the previous week when a new record for the year was made and, had it not been for the holidays, another new record would undoubtedly have resulted.

For the season of navigation 1920 up to the end of October 20,163,015 tons of bituminous coal were loaded into vessels at Lake Erie ports against the program for the movement of coal to the northwest via the Lakes. This figure compares with 21,743,824 tons for the corresponding period in the previous year. While this movement is slightly less this year there has been an increased flow of coal into the northwestern dock territory by all-rail routes which has undoubtedly compensated sufficiently to insure that transportation requirements have been satisfactorily met in providing coal supply for the northwest and in fact the northwestern interests asked that the lake priority order be lifted.

The total number of cars of coal of all kinds loaded during the week ended October 30 fell slightly short of the 1920 record established during the previous week, the total being 256,773 cars for October 30 against 258,404 for October 23. There was a gain over the previous week for bituminous loading of approximately 3,000 cars, the figure being 218,770 for the week of the 30th as compared with 215,875 for the week of the 23d. The principal loss, which was in anthracite loading, of about 4,000 cars, was due to the observance of Mitchell Day, a holiday generally observed in the anthracite region. As compared with the previous year the total number of cars of coal loaded increased 7,318.

Reports of the Car Service Division show that during the first 10 months of this year the railroads transported 36,296 cars more coal into New England than during the corresponding period in 1919. Total all-rail coal movements into New England up to October 30 were 186,178 cars, or approximately 10,239,790 tons as compared with 149,882 cars

last year or about 8,243,510 tons. Bituminous coal transported by water to New England ports, the reports show, totaled 7,124,314 tons during the first nine months this year as compared to 5,670,849 tons during the corresponding period in 1919.

The National Coal Association in a statement on the improved coal situation, said:

"The clearing up of the soft coal situation has been due to the aggressive co-operation of the Interstate Commerce Commission and the railroad executives in the efforts of bituminous coal operators to attain an output sufficient to meet all the demands of the country. Through the priority orders issued by the commission during the summer and fall and carried into effect by the railroads, the operators have been able to get the open top cars needed to transport the volume of coal required to overcome the shortages."

President Wentz of the Coal Association said:

"The country has been saved from the disastrous possibility of a soft coal shortage this winter. For that it has the Interstate Commerce Commission and the railroads to thank for wholehearted co-operation with the operators in what has been a tremendous task.

"It is gratifying, at the same time, to remark the steady drop in prices of soft coal at the mines, wherever prices have been high."

As indicating the further improvement of the coal situation the Interstate Commerce Commission on November 15 issued a further amendment to Service Order No. 20, effective at midnight of Tuesday, November 16, which has the effect of releasing the territory west of the Mississippi river from the use of open top cars preferentially for loading of coal. It also permits carriers east of the Mississippi river to use all flat bottom gondola cars for loading of commodities generally as well as coal. Order No. 20 had extended the territory within which open-top cars were to be used preferentially for coal to the Rocky Mountains.

Inasmuch as recent reports indicate continued reduction in car shortage and consequent easier condition with respect to car supply, increased opportunity is presented for a selection to be made of cars which are moving on Car Service Division Orders, or under equalization arrangements, says a circular issued in the Car Service Division.

"Railroads handling cars under equalization arrangements will not force cross movements upon others, or attempt to forward cars obviously out of route, merely for the purpose of disposing of individual cars but in disposing of excess cars will forward them strictly in accordance with the provisions of the Car Service Rules. It is essential that particular attention be paid to the handling of cars in accordance with Car Service Rule 3 E. All roads are expected to accept cars under the provisions of this rule in a broad and liberal manner in the interests of getting equipment relocated as has been directed by resolutions of the executives.

"Equalization indebtedness as between individual roads may be considered automatically cancelled as of the date when roads refuse to accept such cars by types or classes except under the Car Service Rules. When, however, assistance in car supply is necessary and will result from requiring equalization, such arrangements will be automatically restored as provided in Circular CSD-85, the count to begin as of date of request."

IT IS UP TO THE PUBLIC.—Nothing would more quickly start the movement for better distribution facilities than that business, manufacture, industry, commerce, finance, in all their several branches make and encourage investment in railroad securities of money that is looking for safe, permanent earning position—of course, after having in all cases satisfied one's self of the soundness of that particular railroad fundamentally.—*Cincinnati Commercial Tribune*.

A. R. A. Institutes Claim Prevention Campaign

Available Means of Reducing Freight Loss and Damage Payments Considered at Chicago Meeting

THE FIRST Freight Claim Prevention Congress, called by R. H. Aishton, president of the American Railway Association to: first, promote freight claim prevention efforts on inactive lines; second, increase the effectiveness of freight claim prevention efforts on active lines; and third, co-ordinate efforts of individual lines into a general claim prevention movement, was held at the Hotel LaSalle, Chicago, on November 15 and 16.

Increased co-operation as the best means of reducing freight claims was the keynote of the meeting. Increased co-operation between the carriers, between the various departments of each railroad, between the shippers and the carriers and even between the manufacturers of railroad equipment and shipping containers and the railroads was advocated in many of the papers presented and in practically all of the discussion.

The need for educational work among the employees handling freight with a view to re-establishing their morale, broken as a result of the World War, and the necessity for improving the type of worker employed for stowing and trucking in railroad terminals were also emphasized by many of those participating in the discussions.

The interest displayed in this expansion of claim prevention work was manifested by the fact that the attendance totaled 284, the meeting rooms being filled throughout the sessions with representatives of the operating, traffic and claim departments of a large number of lines.

President Aishton's Address

In opening the congress, R. H. Aishton, president of the American Railway Association, told how the freight loss and damage liabilities of the railways were seriously depleting their revenues, saying in part:

"I have here some figures that were published in the *Railway Age* which should receive the most careful consideration of all of you gentlemen. What the figures show—and I have checked up these statistics and as usual the *Railway Age* is dead right on them—in the year 1914, there were \$32,376,000 paid out by railroads for loss and damage; in 1917—three years later, there were \$35,000,000 paid out for loss and damage with a very slight increase in the number of tons handled, but with practically the same freight earnings in 1918—that was the first year of Government control of railroads and while that possibly may not be responsible for this large amount, it is rather significant—the freight handled was about the same as that of 1917, but the payments for loss and damage to freight jumped up to \$55,000,000—an increase of 58 per cent over 1917 and 71 per cent over 1914. But, continuing further, when you come to 1919, the freight movement was less than in 1918 and less than it was in 1917, yet the freight loss and damage payments increased in that year to \$104,244,000, and that's the reason you are here. That's the reason the railway executives and the Executive Committee got behind this movement.

"Take out of every dollar the railroads receive for freight—in other words, their earnings for handling freight and for the year 1914 they paid back to the shipper for loss and damage to freight, 1.63 cents and in 1919 out of every dollar that was taken in—and a depreciated dollar, at that—there were 3.67 cents paid back to the shipper. Now, the shipper didn't want to sell those goods to you, but what he is interested in is getting his freight moved expeditiously

and as economically as possible and in as first-class condition as possible from the point delivered to destination. After a legitimate claim has been presented, he wants you to remove as much red tape as possible and pay him as promptly as possible. When you do that, you will have every shipper in the country on your side and he will help you in every way possible.

"While you are doing this work, take the shipper into your confidence, call him into your committee meetings and consult with him about anything that affects him. Let him have full knowledge of what you are doing and anything that affects shippers in particular. Let him know what you are doing—take him into your confidence and reach an agreement with him if you can before action is taken, and if you will do that, you will find the shipper will come three-fourths of the way.

"The shipper is vitally interested in freight rates, and the duty of the Interstate Commerce Commission is to fix certain net earnings in certain territories and amongst certain groups of railroads. In fixing these earnings loss and damage enters into that computation, and therefore, shippers are just as much interested, if not more interested, than the railroads are in the elimination of all the expense we may call useless and avoidable. So, just keep that in your mind and also keep in mind this, that the Government of the United States, by the Transportation Act, today is responsible for the revenues of these railroads, and being responsible for the revenues, they are also going to be very much more inquisitive as to the expenses that enter into this, because if they have to provide the means, it is reasonable to assume that they are going to be quite inquisitive as to the various disbursements made by the railroads."

H. C. Barlow's Address

Mr. Aishton was followed on the program by H. C. Barlow, traffic director of the Chicago Association of Commerce, who said in part:

"A large proportion of the damage occurring in transit can and should be avoided. It is the duty of the shipper to deliver goods to the carrier properly marked and in such containers as will carry the goods with reasonable safety to the point of destination. To this end the carriers have promulgated certain rules and regulations which are intended to, and do, in large measure, surround the transaction with reasonable precaution. Where shippers fail to reasonably conform to regulations of this nature it is the opinion of a large number of shippers that the carriers should refuse the goods, rather than accept them and take the chance of damage which may follow. If this does not seem to be a desirable method to pursue then the carriers might profitably pursue a system of education among shipping clerks, that is to say, where any house persistently delivers goods in improper containers or improperly marked, the shipping clerk of that house should be visited in a friendly spirit in an effort to bring about that active co-operation which must exist to get satisfactory results.

"It should be borne in mind that locomotive power is now perhaps four times greater than that used 20 years ago. Again the introduction of the automatic coupler has made possible rough handling of cars in switching service, which was not possible when the coupling had to be made by hand and, in my opinion, the rough handling of cars in yards is account-

able in no small measure for much of the damage to property in transit.

"We all know that a general cause of freight losses has been the falling down of the moral fibre of the people during the great war—when life becomes cheap, property, of course, becomes of very little value. The war is over and the railroads are in the hands of their owners, and we earnestly hope that, with a little of the old-time discipline, downright stealing will be reduced to the minimum.

"One of the great elements which has made pilferage possible is the slow movement of freight in transit, and the leaving of cars of merchandise in outside yards awaiting unloading at inbound freight houses or transfer stations. In this connection it is interesting to note that the freight service time from Philadelphia, Pa., and Baltimore, Md., say to Cincinnati, Ohio, is no faster today and perhaps slower than in 1866, about the close of the Civil War. By this I mean the schedule time. I am firmly convinced that if we could have our merchandise trains speeded up and kept in continuous movement it would eliminate a large portion of the stealing.

"Let the carriers effect a plan for the loading of freight in such manner as will keep it from being crushed, route the same in such manner as will avoid needless transfers, eliminate leaky roofs, keep the merchandise trains moving, avoid setting out cars subject to pilferage in outside yards or at division points, mend broken doors, improper hangings and lockings, and in my opinion claims for loss and damage will be greatly reduced."

The Duty of Carriers in

Claim Prevention Work

The discussion at the first day's session of the conference was directed to the carriers' duty to the public to minimize transportation failures, the carriers' duty to themselves and to each other to conserve their resources by safe and economical operation to the end that the properties, the service and the personnel may share the benefits, and the economic waste involved in so much loss and damage of freight.

J. B. Baskerville, chairman of the Cause and Prevention Committee of the American Railway Association, in speaking at the first session, referred to the losses consequent upon transportation failures which cannot be reckoned in dollars and cents, such as loss of labor and material which have gone into the article diverted from its intended use and the disruption of the business routine frequently requiring substitutions and makeshifts for which loss a money payment does not compensate and which the claimant cannot recover.

"The freight claim situation in the past," Mr. Baskerville said, "has been the point of most acute contact between the public and the carriers, and this contact can be softened and made mutually helpful by an understanding of each other's problems, a frank recognition of each other's rights and the fair and square acceptance by each of his own burdens and responsibilities. While the carriers are operated individually, their duty to the public is collective, and the shortcomings of one of course reflects upon the whole. Hence, claim prevention while prosecuted on the individual line should be so carried on as to have its proportionate weight and effect upon the whole transportation problem."

Duty of Carriers to the Shipping Public

J. F. Horrigan

Freight Claim Agent, Southern Pacific

The following are abstracts of several of the papers presented at the four sessions of the congress and show in general the trend of the discussion:

The duty of the carrier to the shipper in connection with

handling his freight is not fulfilled by the prompt payment of a freight claim presented for any loss or damage to the shipment in the course of transportation. There is a further obligation on the part of the carrier to transport such freight safely so that it will reach the consignee in the same good condition that it was in when delivered by shipper to carrier. Failure in this respect results in an indirect loss to the shipper over and above the amount of money covered by the claim for reimbursement in that a dissatisfied customer often attributes the condition of the freight to the fault of the shipper and as a result will make future purchases from other concerns.

In the conduct of a business as large as a railroad where freight passes through so many hands and grades of employees, even with all of the safeguards surrounding it, there will still be a certain amount of loss and damage, but, as a majority of freight loss and damage is due to the man failure, that is, failure of railway employees to carry out existing instructions covering handling of freight, the carriers should not dismiss the subject on the theory that if the freight is damaged in transit and a claim is presented and paid, the shippers should be satisfied. They should go further and supervise the handling in such a way that the major part of the loss and damage which is in the hands of the carriers themselves to correct will be corrected. In other words, we must take some decided action to reduce this annoyance and not feel that it is cheaper to pay claims than to prevent them.

The obligations of railroads as common carriers to the public are such that even a partial fulfillment of them would seem to make it improper for any road to be wholly classed as "inactive" with respect to the subject before this congress. We know that some have made special efforts to increase their efficiency by intensifying their supervision and enforcing rules that have been promulgated. It is hoped that all lines will join in a combined effort to put into effect such reforms as may be necessary, not only to check freight losses, but to reduce them to the lowest possible minimum consistent with practical operation.

Duty of the Carriers to

Themselves and to Each Other

A. R. McNitt

Freight Claim Agent, Union Pacific

Loss of, and damage to, freight, resulting from negligence or failure to provide reasonable means to prevent, represents nothing less than deliberate waste. Such disregard for means to protect property entrusted to the care of railroads cannot be too severely condemned and if not remedied will result in magnifying actual or fancied grievances to a degree where it will become a serious factor to contend with in any efforts that are made to strengthen public confidence.

The monetary consideration alone should be sufficient to attract the attention of the railroad management and emphasize the importance of immediate action to arrest freight losses due to causes of a preventable nature and especially where that is now possible of accomplishment by utilizing the means afforded through their regular organization.

Duty of Each Carrier to Itself

It is the duty of a carrier to serve the public with the utmost degree of efficiency and thereby fulfill its obligations in the handling of business so earnestly solicited. To do this it is not only necessary to furnish adequate facilities for the receiving, transporting and delivering of freight but proper protection of it as well. To be assured of reasonable efficiency in the matter of protecting freight, it is necessary to analyze claims, exception reports and all other sources of information reflecting causes of loss or damage and then apply the necessary corrective measures. To a

very great extent this is possible of accomplishment through the regular organization of an operating department but a systematic method must be devised by which causes can be located, responsibility fixed and corrective or disciplinary action applied in all cases consistent with the offence. This will assist in establishing not only a low minimum of preventable causes but to a large extent reduces those now classified as "unknown" or "unlocated." A prevention organization should be provided that will afford all employees an opportunity for a free and restricted interchange of ideas. This will create and maintain interest in prevention work, develop new ideas and methods and also serve as an advisory cabinet to supervising officials from which the latter can obtain first-hand knowledge of existing conditions that would be impossible to secure in as prompt, complete and reliable a manner by any other means.

Inter-Related Duty of Each Carrier to Other Carriers

Considering the large proportion of revenue derived from inter-road traffic, it follows that the individual carrier must be concerned in any assistance it can render other carriers in the protection of freight during its transportation to the ultimate destination and cannot consider itself as aloof or standing alone in rendering all possible assistance to perfect the service on the through movement. Therefore, all lines should consider themselves as in duty-bound to report known irregularities to another carrier at fault and give the same consideration to such reports when received as they would to their own, thus working towards the establishment and maintenance of uniform practices and rules.

Financial Loss Incurred by

Carriers and Shippers

C. C. Glessner,

General Freight Claim Agent, Baltimore & Ohio.

Reports compiled by the Bureau of Railway Economics are our authority for the statement that in the adjustment of loss and damage claims the cost of loss and damage to freight for "Class 1" railroads increased from \$23,346,000 in 1916, to \$55,700,000 in 1918, and to \$106,800,000 in 1919. The percentage of increase of the average of 1918 and 1919 over the average of the four years 1914 to 1917 is 168.1 per cent. The percentage of loss and damage to freight revenue increased from 9/10 of one per cent in 1916 to a fraction over 3 per cent in 1919, and the railroads' loss and damage expenditures per ton of freight carried rose from 1.07 cents per ton in 1916 to 5.37 cents per ton in 1919.

The loss and damage expenditures in 1919 equalled a cash dividend of 4 per cent on two and a half billions of dollars, or in other words the causes which result in loss and damage claims cost the carriers in one year as much as the Baltimore fire of 1904, which wiped out the entire business district of that city, or in the last three years they equalled the amount paid for such a calamity as the San Francisco earthquake and fire in 1906. Loss and damage to freight in 1919 equalled a rental of \$45 per car annually on all freight cars in service on all railroads today (2,350,000 freight cars).

The force and meaning of the foregoing remarks cannot be weakened by alleging that a considerable portion of the great increase of 358 per cent in 1919 over 1916 is due to the higher prices of 1919; a part of this increase is due to that cause, but when it comes to the increase of nearly 100 per cent in loss and damage claim payments in 1919 compared with 1918, increased commodity prices can hardly be used in any measure as an explanation, since the United States Department of Labor figures show an increase in prices in 1919 as compared with 1918 of no more than 8 per cent.

It is the desire of the Cause and Prevention Committee

that every line member of the American Railway Association will organize an active campaign for claim prevention, and we would suggest that we adopt as our slogan, "*Cut loss and damage in half. It can be done.*"

Effectiveness of Carriers'

Existing Organizations

F. W. H. O'Meara,

Freight Claim Agent, Chesapeake & Ohio.

The measure of success of the organizations now in existence for the purpose of prevention of freight loss and damage may be said to depend upon:

1. The thoroughness and promptness with which the Freight Claim Departments analyze and bring to light the causes of freight loss or damage and the degree of care used in making specific those causes to enable the application of proper preventive measures. The more a responsibility is definitely fixed for these causes by the data furnished by the Freight Claim Departments, the greater will be the result.

2. The adoption of the needed remedies by the railroad departments involved, including such expenditures as are shown to be required and as would at the same time be justified.

3. The concentration by the organizations now in existence for the prevention of freight loss and damage upon the conditions that may change from time to time that contribute most largely to this expense. Take, for example, at the present time the item of defective equipment, mostly leaky cars. If the Chesapeake & Ohio can be used as a fair average in this respect, the carriers at the present time are paying out at least 20 per cent of the total loss and damage due to this cause. Another item is the damage, whether located or unlocated, which is largely due to the rough handling of the cars, particularly in hump yards. Approximately, according to the Chesapeake & Ohio record, 25 per cent of the total loss and damage expense each month is attributable to this cause. Concentration by the machinery set up by the claim prevention organizations upon such cases as mentioned and which are contributing so largely to this expense cannot fail of the desired results. Another item that may be mentioned in this connection is that at the present time, due to the almost general decline in market values, the importance of a reasonable and prompt handling of traffic, subject to these changes, should be stressed by these organizations of all carriers.

4. The full co-operation of the shipping public to be fostered by the recognition by the carriers of their responsibility for the proper and prompt handling of freight that is delivered to them for transportation. If co-operation is desired it must be full and complete upon the part of all those concerned, and if the carriers are to realize the benefits from a full co-operation on the part of the shippers, they must handle their traffic efficiently.

5. The expansion of direct investigation and supervision on the ground of conditions that cause freight loss or damage, and the employment of sufficient and capable men for the purpose. The advantage of the employment by carriers of capable outside men to study and locate causes of freight loss and damage is not only in the obtaining of better information than can be done otherwise, but the contact of these men with the shipping public and the carriers' employees concerned, has or should have a far reaching effect.

6. The maintenance of interest to the maximum by the different units of the organization and employees generally in the prevention of freight loss or damage by publicity and exchange of information pertinent to this situation. I have in mind such publicity as the minutes of prevention meetings, the use of employees' magazines and other similar pub-

lications, the regular issuance of claim prevention bulletins by the Freight Claim Departments, and furthermore the issuance of letters of commendation where deserved.

7. The publication by the Freight Claim Departments of claim statistics in such a manner as to show as nearly as possible in comparative form the records of operating divisions or individual stations in matters pertaining to freight loss or damage.

Fundamentally it might be said that there are only two requisites to the degree of success of the existing organizations to prevent freight loss and damage. One devolves upon the Freight Claim Departments and the organizations in connection therewith to systematically and promptly bring to the attention of those who have in charge the correction of conditions that cause this loss or damage. The other is the application by the carriers' departments concerned of the measures that are needed to correct these conditions, and in this connection it is my opinion that the larger contributing causes, and which may be termed as applying generally in the movement of traffic, should be brought directly by the Freight Claim Departments to the attention of the chief operating officer of the railroad.

Methods of Utilizing

Established Organizations

F. W. H. O'Meara

Freight Claim Agent, Chesapeake & Ohio

There cannot be too much co-operation between bureaus or other organizations for the purpose of preventing freight loss and damage, if we hope to get the maximum results in the control of freight loss or damage. Speaking specifically, first, to the Weighing Bureaus. There should be full use of the experience and data in possession of these bureaus. Accuracy of scales and weighing methods, particularly of such bulk freight as coal, is very essential in the prevention of claims and loss. The Inspection Bureaus can also be made a big factor in the control of this situation. They can be of particular assistance in the policing of marking and packing, adequacy of containers, inspection of fruits and vegetables, etc., locating methods of carload shipments with respect to the application of the M. C. B. Loading Rules, and inspection of damaged shipments at large terminals for all carriers.

Other Papers and Discussions

J. D. Shields, freight claim agent of the Chicago, Burlington & Quincy, in discussing the economic waste in the country's products resulting from freight loss and damage, called attention to the fact that these losses in 1919, amounting to \$107,000,000, do not represent the whole value of the commodities lost or damaged nor the entire loss to the public, since there must also be considered the wasted efforts of the army of men that produced this great volume of goods. In directing this reform the railroads should not measure their activities by the amount of their loss and damage expenditures alone, but should give due consideration to the tremendous economic waste, he said.

Joe Marshall, freight claim agent of the Missouri, Kansas & Texas of Texas, presented a paper on employees' co-operation, offering several plans by means of which the employees might be interested in claim prevention work. One plan, Mr. Marshall said, was to create a general claim prevention committee composed of the heads of each of the departments handling freight, to which committee district and divisional committees, made up of the representatives of each branch of service on each division, would report. Mr. Marshall also outlined several methods of educating employees, among which are the following:

Special articles in railroad magazines by employees, where possible.

Monthly letters to particular classes of employees on claim prevention, and letters by agents showing what was done during the previous month in the interest of claim prevention.

Periodical meetings of station forces to discuss handling of the business of their station to save claims, as well as to suggest subjects for the district meetings or develop subjects received from them—publishing these findings.

Preparation of papers on special subjects for discussion at meetings.

Illustrated circulars taken from photographs distributed with the Freight claim department's mail or by the superintendents.

Suggestion cards filled out by employees and mailed to headquarters.

Information circulars to the men in each class of service. Such circulars provide talking points for the men.

Sending form letters to new men entering the service to start them right from a prevention standpoint.

Annual passes for committeemen, who are men selected for their interest and who will do missionary work among their co-workers.

H. M. Moore, freight claim agent of the Southern Pacific, Louisiana Lines, discussed the best methods for the exchange of information and the establishment of practices between interested lines to correct conditions creating claims.

Mr. Baskerville closed the meeting with a paper on the means of utilizing the Committee on Cause and Prevention of the Freight Claim Division of the American Railway Association for the exchange of information and for the co-ordination of claim prevention activities.

Departmental Co-ordination on Each Line

C. H. Dietrich

Freight Claim Agent, Chicago, Milwaukee & St. Paul.

Departmental co-ordination so far as it applies to the work of our claim prevention organizations represents the harmonious or reciprocal relationship between various departments of our transportation organizations, which will affect in any way the loss and damage situation. My personal observation has been that the greater proportion of our claim prevention bureaus, as they are organized at present, throw the bulk of the responsibility and a considerable part of the actual work on to the Freight Claim Department, and there seems to have been a tendency heretofore to give too little consideration to the suggestions and recommendations made by claim prevention bodies looking toward the elimination of claim causes that our investigations and studies have convinced us are responsible for many of our principal troubles. I believe it is a well settled question that has been fully demonstrated by some of the most efficient prevention organizations actively functioning today, that in order to secure the best results in this work, not one or two but all departments of a transportation company must lend their efforts and maintain an all year around interest in prevention work, and to do this they must all be represented on and take an active part in the claim prevention organization maintained on the various lines. The Freight Claim Agent and his staff must always remain the moving spirit in this work, for it is from his department that practically all information and freight claim statistics emanate on which the prevention bureau depends to guide it in its efforts. Furthermore, the Freight Claim Agent's close contact with all claims received, quite naturally provides him with valuable material with which he may feed the prevention bureau that they would perhaps be unable to secure otherwise. With sufficient information, properly classified and analyzed, your claim prevention organization should be in a position to determine the principal causes, together with the more important commodities that are responsible for the bulk of their claim payments, for when this is correctly ascertained, the co-ordination of the various departments can be intelligently directed toward the actual elimination of your most fruitful causes.

The Society of Railway Financial Officers

Report of Interesting Fourteenth Annual Meeting Held at
Richmond, Va., November 10 to 12

DISCUSSION of the handling of the detailed problems of the railway financial officers' work and consideration of the broad aspects of the financial officers' function were combined in a somewhat unusual fashion in the fourteenth annual meeting of the Society of Railway Financial Officers at the Hotel Jefferson, Richmond, Va., on November 10 to 12. The meeting of the railway treasurers and other financial officers was characterized by a large attendance, by the calibre of the papers read and by a lively and fruitful discussion of these papers. The sessions were presided over by the president of the society, H. R. Wheeler, treasurer of the Boston & Maine.

The meeting was welcomed to Richmond by the mayor of that city, George Ainslie.

The morning session on Wednesday was addressed also by Governor Davis of Virginia. Mr. Davis spoke on the deflation policy of the Federal Reserve Board and criticized it severely.

"The farmers are dissatisfied with the present trend of affairs, manufacturing is at a stand-still and bread lines may result from this disastrous plan of deflation," he said.

"Our ideas of government must expand," he also declared. "The best way to remedy conditions would be by instructions from the Federal Reserve Board to member banks that they lend money only for uses in the legitimate channels of business and not for speculation, such as has advanced the 'call money' rates on Wall Street."

In his speech the governor declared that the railroads were a fundamental factor in the nation's life, and that they have recently received consideration in legislation by Congress in the way of increased rates and should now exert their influence on behalf of other fundamental factors, agriculture and industry. In conclusion he asked the support of the convention in the alleviation of conditions which threaten disaster, for, he said, one branch of activity cannot prosper unless others do.

The afternoon session was addressed by John M. Miller, president of the First National Bank of Richmond. Mr. Miller spoke on the "Attitude of the Public Toward the Railroad." On the following morning he again spoke for a few minutes and answered Governor Davis' criticisms relative to the deflation policy of the Federal Reserve Board. The afternoon session was also addressed by T. H. B. McKnight, treasurer of the Pennsylvania at Pittsburgh, who spoke on "Personality in Business." A paper read by John T. Reid, treasurer of the Atlantic Coast Line at this session entitled "Surrender of Claim for Order Notify Shipments Delivered Without Surrender of Bill of Lading" is briefly abstracted below.

Thursday's session was addressed by F. H. Hamilton, treasurer of the St. Louis-San Francisco, who read a paper entitled "Practices Under Federal Order No. 30." Following the reading of his paper, Mr. Hamilton introduced the following resolution which was adopted by the convention:

"The Society of Railway Financial Officers, in annual meeting assembled at Richmond, hereby recommends to the Association of Railway Executives that it take action in some way to the following effect:

WHEREAS, The present method of settling adjusted balances by separate draft for the balance of each class of traffic as ascertained involves a great deal of unnecessary collecting through banks, in many cases the balance on one account being a debit and the balance on another account being a credit, and causes in many instances the payment of money between carriers when it is not

really due and makes it necessary to carry a larger working balance than would otherwise be necessary.

THEREFORE, be it resolved, that until a general clearing house for settling all inter-company accounts is established, all adjusted (agreed) balances between any two roads, including debits arising under the "Denver Plan" and under rule 255, should be consolidated into one account to be settled at a certain time each month by draft of the creditor company for the resulting net balance.

A paper was read at this session by T. W. Mathews, assistant treasurer of the Seaboard Air Line on the "Preparation of Checks and Payment of Wages by Division Paymasters." Mr. Mathews' paper will appear in fairly complete form in an early issue of the *Railway Age*.

The afternoon session was addressed by Eppa Hunton, Jr., president of the Richmond, Fredericksburg & Potomac. Mr. Hunton discussed the relations between the railways and the public. He pointed out that the good-will of the public is in a large measure in the hands of the employee who comes in contact with the shipper or passenger. He also commented at some length on the Transportation Act and expressed his opinion that it was second only to the Federal Reserve Act in being the most constructive piece of legislation passed for several years.

This session was also addressed by A. B. Jones, local treasurer of the Chicago & North Western, who spoke on the "Safeguarding and Transmitting of Railway Collections." An abstract of Mr. Jones' paper is given below. James Y. Yates, assistant treasurer of the Grand Trunk, also read a paper on the "Railways of Canada," which gave a historical study of the transportation systems of that country.

The Friday morning session was addressed by A. F. Bayfield, treasurer of the Lehigh Valley. Mr. Bayfield's paper entitled "Selling Stock to Employees on the Installment Payment Plan" is given on another page of this issue.

The annual dinner on Thursday evening was addressed by Douglas S. Freeman, editor of the News Leader of Richmond.

Abstracts of two of the papers follow. As noted above, one of the other papers appears elsewhere in this issue and a fourth will be published later.

Settlement of Claims for Order Notify Shipments

Delivered Without Surrender of Bill of Lading

The paper on this subject, by John T. Reid, treasurer of the Atlantic Coast Line, said in part:

The ownership of an "order notify" shipment is in the holder in due course of the original bill of lading. The delivery of an "order notify" shipment by a carrier without requiring the surrender of the original bill of lading properly indorsed is made only at its peril, and for such deliveries, the carrier should protect itself. The rules now generally in force, which were recommended by a committee of the Society of Railway Financial Officers, and which are substantially a continuation of the rules in effect during federal control, provide for such protection by requiring the deposit of a certified check for an amount equivalent to 125 per cent of the invoice value, or the filing of a surety bond, with surety acceptable to the treasurer of the carrier, in an amount twice the amount of the invoice value, or under a blanket surety bond. If delivery is made without surrender of the bill of lading, the carrier incurs a liability to the holder in due course of the original bill of lading. Claims for payment for an order notify shipment delivered without surrender of bill of lading should be accompanied by the bill of lading properly en-

dorsed, or by evidence satisfactory to the carrier that the original bill of lading has been lost or destroyed, and that the claimant is the owner thereof; in the event that the bill of lading has been lost or destroyed, the carrier, before paying claim, should require protection by an indemnity bond, with acceptable surety in an amount twice the amount of the invoice value, the same amount of the surety which is required for the delivery without surrender of the bill of lading. Loss and damage claims are usually filed with the freight claim agent and a claim for a shipment delivered without surrender of the bill of lading should likewise be filed with him as he has the machinery for investigating claims and such claim is in the nature of a loss and damage claim; the bond, however, should be submitted to and approved by the treasurer of the carrier in the same manner as a bond for delivery without surrender of the bill of lading.

Consignors making order notify shipments usually attach the original bill of lading, endorsed, to a draft drawn on the notify party, depositing the draft for collection and the loss or miscarriage thereafter in the mails is the most prolific cause for the bills of lading being lost or delayed. Every reasonable facility consistent with sound business principles should be extended by the carrier to the owner of the bill of lading for remedying its loss. A practical method is for an acceptable surety bond to be filed with and in favor of the destination carrier providing for the delivery of the shipment to the order of the owner of the bill of lading, who can make a draft, with the order attached on the person to whom he desires the delivery made, and the agent of the carrier after receiving authority from the treasurer can make the delivery on surrender of the order properly endorsed. If there is any doubt in the mind of the agent as to the genuineness of the order he can require the exhibit of the paid draft or other satisfactory evidence. This method will enable the owner of the bill of lading to obtain settlement for the shipment more properly than by claim. If the shipment has already been delivered proper adjustment can generally be made and the transaction terminated.

Safeguarding and Transmitting of Railway Collections

Arthur B. Jones local treasurer of the Chicago & North Western, in his paper on this subject said in part:

To best accomplish the safeguarding and transmitting of railway collections, and to make them quickly available for use by the railway company, treasurers should put into the hands of agents definite and complete rules of procedure, for it is almost as important that rules regarding the money of the company be governed by such instructions as it is that operation of trains be so governed.

As we cannot force compliance through the various forms of discipline available to the operating officer we must hit upon the best manner of issuing instructions. Circulars of the ordinary sort are often hastily read, if at all, and rarely preserved. First, a book of instructions covering all financial affairs at stations should be issued by the treasurer and, for additional force and effect, bear the approval of the president. Thereafter, additions and changes should be printed upon paper of the same size as the pages in the book and be issued to agents with instructions to insert them in their proper place in the book. This provides complete instructions at all times and is available to all concerned, including the new or ambitious subordinate.

And this reminds me that I have sometimes wished that we in the financial department might have the further and automatic means for safety which obtains in the operation of trains—such as the interlocking devices, particularly the derail—so that even though a rule might be disregarded, disaster would be avoided. We frequently, however, find those handling money running past the caution signal and the home signal, and on through open switches, leaving us to repair the

damage as best we can. Much honor awaits the financial officer who will invent a financial derail!

Up to a few years ago, comparatively, payment of all charges, including freight, was required to be made in cash and the cash itself sent directly to the treasurer. Gradually, of course, the use of checks and drafts grew to the point where practically all freight charges are now thus paid, and it would be impracticable and undesirable, both for the carrier and the shipper, that currency be used. Under some conditions, too, it is well that checks, money orders and drafts be accepted for passenger service. When checks were taken at all, it was long the custom for the agent to present them to the local banks upon which they were drawn and receive cash over the counter remitting it with his other cash collections. The custom is now quite general of turning the station's collections over to a local bank daily, accepting in lieu thereof the bank's draft drawn on its correspondent, preferably in the city to which the remittances went. This method of doing business is beneficial to both the railway company and the bank.

Mr. Jones then described various other means of effecting satisfactory co-operation between the railway companies and the banks down the line of road. He discussed also the making of remittances by agents and conductors and concluded with a reference to the proper safeguarding of frauds while they were in the hands of the agent.

Due to increased passenger travel, he said, the increase in passenger fares and the increased activity of the "hold up man," the amount of risk, particularly at large passenger stations, has of course greatly increased and correspondingly greater precautions should be taken than formerly, including more secure safes, windows, gratings and locks and the providing of fire arms in some cases.

Election of Officers

At the election of officers, E. L. Copeland, treasurer of the Atchison, Topeka & Santa Fe, was elected president; E. L. Rossiter, treasurer of the New York Central, first vice-president, and J. S. Sneyd, assistant treasurer of the Philadelphia & Reading, second vice-president. E. L. Copeland was elected to the executive committee for one year and the following four for the regular two year term: E. L. Rossiter, J. P. Reeves, treasurer, Chicago & Eastern Illinois; D. K. Kellogg, treasurer, Richmond, Fredericksburg & Potomac, and G. K. Warner, treasurer and assistant secretary of the St. Louis Southwestern. The society now has 215 members.



Photo by Keystone View Co.

The Royal Train Meeting the Prince of Wales at Portsmouth on His Recent Return to England

American Railway Association Holds Annual Meeting

THE Annual Session of the American Railway Association was held at the Blackstone, Chicago, on Wednesday, November 17, 1920, with R. H. Aishton, president of the Association in the chair. Announcement was made that the following were elected members of the board of directors by letter ballot:

E. W. Beatty, President, Canadian Pacific.
B. F. Bush, President, Missouri Pacific.
W. R. Scott, President, Southern Pacific, Texas-La. Lines.
A. H. Smith, President, New York Central Lines.
W. G. Besler, President and General Manager, Central of New Jersey.
W. H. Truesdale, President, D. L. & W.
E. J. Pearson, President, N. Y., N. H. & H.
J. H. Hustis, President, Boston & Maine.
W. W. Atterbury, Vice-president, Pennsylvania System.
Daniel Willard, President, Baltimore & Ohio.
Hale Holden, President, Chicago, Burlington & Quincy.
W. B. Storey, President, Atchison, Topeka & Santa Fe.
H. E. Byram, President, Chicago, Milwaukee & St. Paul.
C. H. Markham, President, Illinois Central.
C. R. Gray, President, Union Pacific System.
N. D. Maher, President, Norfolk & Western.
W. L. Mapother, Executive Vice-president, Louisville & Nashville.
H. G. Kelley, President, Grand Trunk.

The Executive Committee reported that the membership of the Association at the present time consists of 716 railroads, operating 308,012 miles of road.

On the recommendation of the Executive Committee, the Association passed a resolution deprecating efforts to make the use of the metric system in weights and measures compulsory and ratifying the action taken by the Engineering and Mechanical Divisions to the same effect.

The Executive Committee also reported that arrangements have been made to include the American Association of Local Freight Agents and the several associations of Railway Surgeons throughout the country, as sections of the American Railway Association.

The general committees of the various divisions reported on the activities of the divisions during the year and with few exceptions the actions taken and their recommendations were adopted by the association.

Interesting addresses on the transportation problem, which has been presented to the railways since they were returned to private operation, were made by President Aishton, Colonel F. G. Robbins, director of the Bureau of Service of the Interstate Commerce Commission, and W. L. Barnes, executive manager of the association.

Mr. Aishton pointed out that ever since the transportation act was passed, giving the Interstate Commerce Commission authority to regulate service, the commission had made clear its desire that the railways themselves as far as possible should co-operatively handle all matters pertaining to service. The railways have brought about the needed co-operation between themselves in the rendering of freight service through the Car Service Division of the association, which has at all times benefited in its work by the counsel and support of the commission and its Division of Service. He praised the individual railways for the loyal support they have given through the Car Service Division within recent months, and emphasized the fact that only by working together as they have can they render unnecessary the direct exercise by the commission of the great powers over service given it by the transportation act. Mr. Aishton gave detailed statistics showing the great increases in efficiency of transportation which have been attained since the railways were returned to private operation and said that the record made by the railways in August in rendering an average of 557 ton miles of freight services per freight car daily was the best record ever made.

Colonel Robbins expressed the appreciation of the Interstate Commerce Commission and of himself regarding the successful efforts which have been made by railway officers within recent months to improve transportation conditions. He said it was generally conceded that never were the railways of the country confronted with such a complex and difficult transportation problem as that by which they were confronted immediately after the termination of government control. He referred to the bad effects produced by the "outlaw" strikes and said that the improvements in the transportation situation effected since then were the results of wonderful work. He believed it had been definitely proved that the movement of freight cars in fleets from one part of the country to another to meet seasonal demands for freight transportation in periods of emergency was a good thing when properly supervised. Proper supervision required adequate machinery, and he believed that the Car Service Division of the association furnished the needed machinery and that the Division of Service of the commission would be glad at all times to co-operate with it. He urged that when individual railways felt that there had been injustice by orders of the commission or the Car Service Division they should send representatives to Washington to present the facts regarding their local conditions. The commission's Division of Service, he stated, intends to establish agencies in various parts of the country to keep in touch with transportation conditions and to co-operate with the shippers and the railways in dealing with congestions and car shortages. He made four recommendations regarding the future policy of the railways: First, maintain the Car Service Division; second, standardize reports regarding shippers' unfilled orders for cars; third, standardize methods of distributing cars as between the various railways; fourth, specialize on organizations to improve the handling of cars at division points and stations. Since 1908, he said, the car carrying capacity of the country had increased only 33 per cent, while the freight to be handled has increased 94 per cent. These figures show why it is so necessary to have better handling of cars. He believed that station agents if properly trained could do more than any other class of railway men to help the car situation by getting local shippers to load cars heavily, to load and unload them promptly, to route shipments intelligently and in other ways to make more efficient use of the cars available.

Mr. Barnes said that the Car Service Division was not unmindful of the difficulties met by the individual railways in satisfying their patrons and at the same time obeying the orders of the Car Service Division. The question presented to the railways, however, was whether they would through their own machinery handle the distribution of cars or fail to do so, and thereby make it necessary for the Interstate Commission to exercise fully the powers given it by the transportation act. The time had come when it was impossible for the railways individually to handle car service matters, and if as a whole they were to handle these matters themselves they must do so in constant contact with the regulating authorities. He expressed the opinion that railway equipment never again would exceed the requirements as it did before 1916, and that for this reason the closest co-operation by the railways in handling it would always be more important than it had been heretofore.

The position of the Transportation division that the present Car Service Rules shall not be revised or any new rules promulgated for adoption until after the present rules shall have been given a fair trial by the railroads, subscribers to the Car Service and Per Diem Agreement, and the results from such a trial indicate that a revision of the rules is necessary, was approved by the Association.

The next session of the Association will be held in November 1921, at a place to be decided upon by the Board of Directors.

Accident Bulletin 74

THE INTERSTATE COMMERCE COMMISSION has issued Accident Bulletin No. 74 containing the record of collisions, derailments and other accidents on the railroads of the United States for the last quarter of 1919 and also the tabular statements for the twelve months ending with December.

Remarkable decreases are shown in many items, as compared with 1918. In the twelve months of the year now reported, 110 passengers, 366 employees and 41 other persons were killed in train accidents, and 4,549 passengers, 3,202 employees and 124 other persons were injured; as compared with a record in the preceding year of 286 passengers, 554 employees and 156 other persons killed and 4,655 passengers, 4,250 employees and 500 other persons injured.

The comparisons of the principal items appear more fully in the table given below. Both in the table and in the figures which we have just given several items need explanation. The aggregate of the persons killed in train accidents (given above), 517, is 48 per cent less than the total in 1918; but the total for the earlier year was swelled by the inclusion of "other persons, not trespassers" killed at highway grade crossings, as occurring in train accidents. Those thus classed in 1919 number only nine, whereas in 1918 the number was 117. Taking only the passengers and employees (including employees not on duty) the decrease was 43 per cent. The number of employees on duty killed in train accidents (359) is 34 per cent less than in 1918.

The decrease in the number of passengers killed in train accidents calls to mind the fact that the record for 1918 included two of the worst disasters on record; at Ivanhoe, Ind., on June 22, killing 68 persons, and Nashville, Tenn., on July 9, killing 101.

The combined total in our table, 6,978 killed plus 149,053 injured (=156,031) is the smallest since 1910; and the total of killed is the smallest since 1898. The most notable change contributing to this diminution is the falling off in the number of trespassers killed by being struck or run over by trains. The total under this head is less than half the total in 1914. For the ten years 1905-14 the average annual number of trespassers killed (including those killed in train accidents) was 5,290, as compared with 2,553 in this report. In an appendix the Bulletin gives these and other totals for each year back to 1888. The largest annual death roll of trespassers, 5,612, was that for the year ending June 30, 1907.

CASUALTIES TO PERSONS IN TRAIN ACCIDENTS AND TRAIN SERVICE ACCIDENTS; THREE YEARS.

	1919		1918		1917	
	Killed	Injured	Killed	Injured	Killed	Injured
Passengers—						
In train accidents.....	110	4,549	286	4,655	131	4,460
In train service accidents..	191	3,598	233	3,427	212	3,914
Total	301	8,147	519	8,082	343	8,374
Employees on Duty—						
In train accidents.....	359	2,955	547	4,179	439	4,214
In train service accidents..	1,334	33,325	2,212	42,782	2,177	48,022
Total	1,693	36,280	2,759	46,961	2,616	52,236
Total passengers and Employees on duty..	1,994	44,427	3,278	55,043	2,959	60,610
Employees not on duty... 66		321	169	595	165	544
Other Persons, not Trespassing—						
In train accidents.....	9	61	117	433	109	473
In train service accidents*..	1,873	5,134	1,878	5,268	2,091	5,514
Total	1,882	5,195	1,995	5,701	2,200	5,987
Trespassers†—						
In train accidents.....	32	63	39	67	68	76
In train service accidents..	2,521	2,595	3,216	2,738	4,175	3,753
Total	2,553	2,658	3,255	2,805	4,243	3,829
Total of the above... 6,495		52,601	8,697	64,144	9,567	70,970
Non train accidents..... 483		96,452	589	110,431	520	123,835
Grand total.....	6,978	149,053	9,286	174,575	10,087	194,805

* Includes persons struck by trains at highway crossings.

† A small percentage of the persons classed as trespassers represents employees.

‡ Of the 52,601 persons here recorded as injured, 502 were reported by the railroads as having subsequently died.

This report is a pamphlet of 69 large pages (7 in. x 9 in.) and, like No. 70, for the last preceding year, contains a great mass of details, useful and other. Twenty or more pages (pages 25-46) are filled with details and classifications not before published. For example, table No. 82—about 10 in. x 14 in.—separates miscellaneous train-service accidents into 75 classes of accidents and 19 classes of persons. Here we find persons injured by coach trap doors entered under three causes. Adjusting car windows and adjusting caboose windows are lumped together; and of the 60 passengers injured by such windows it is impossible to tell how many were in cabooses and how many were on passenger (sleeping, chair or common) cars. Class No. 66 is "Handling dishes, utensils, etc., in dining or official cars." Of the 97 persons thus injured only one (a brakeman) apparently had no business in the culinary department. Whether he was in an official car (and thus presumably had been ordered by the general manager to assist in carving, so that his cut finger was a legitimate accident) or had merely borrowed a hot poker from a dining car cook, does not appear. The tabular statement of the causes of train accidents fills eight pages. Under this head defects of roadway are divided into 92 subclasses and miscellaneous causes into 72.

In the following table the reader may make a rough comparison of the money losses by train accidents in the two years, 1918 and 1919. The damage due to collisions was less in 1919 than in 1918, but that due to derailments was greater. The total, \$22,675,820 is about eight per cent greater than in the preceding year. These figures, it will be remembered, do not include damage to freight or sums paid or payable on account of bodily injury to persons.

	1919				1918			
	Persons*		Persons*		Persons*		Persons*	
	No.	Damage†	Killed	Injured	No.	Damage†	Killed	Injured
Collision	6,904	\$5,697	238	3,931	8,715	\$6,811	499	4,431
Derailments ...	15,897	15,572	175	2,979	13,568	12,923	290	3,978
Locomotive accidents	674	495	43	261	514	346	42	363
Miscellaneous...	2,121	912	29	441	1,898	874	126	566
Total.....	25,596	\$22,676	485	7,612	24,695	\$20,954	957	9,338

* Excluding trespassers.

† In thousands.

The appendix to the Bulletin contains a number of tables showing various interesting facts. While the number of trespassers killed and injured, as before noted, shows a large reduction, the number of persons killed or injured at highway grade crossings is more than double the number in 1910; and since 1911 the number of persons killed has been more than 1,000 each year; and the totals for 1919 are 1,784 killed, and 4,616 injured.

In 1918, the latest year for which figures are available, one trainman in every six was injured, and one in every 160 was killed. There are some notable changes in this column. For many years down to 1903 the number injured, annually, was one in about ten or twelve. This apparent doubling of the ratio of danger would seem to have been due to some change in the basis of reporting, or in the care with which statistics are gathered. In the statements of the number of trainmen killed, there is an improvement, as was to be expected. In the ten years 1890-1899 the average annual number was one in 137, while in the ten years last reported the average was one in 229.

THE RAILROAD TAX LEVY in New Jersey for 1921 is to be the largest in the history of the state. The total tax for 1921, as certified by the Board of Taxes and Assessments to the various companies, is \$12,644,801.54, an increase of \$1,875,445.98 over the tax paid for the current year. The tax is based upon an aggregate valuation of \$391,166,449, which is an increased valuation of \$18,917,468 over 1920.

General News Department

The Canadian Pacific has voted to contribute \$50,000 to a fund which is being raised for the University of Montreal.

Engineering Council in a recent study states that of 170 commissioners on State, public service or other regulatory commissions, only 6, or 3.5 per cent, of the total number are members of such societies as the American Society of Civil Engineers, the American Institute of Mining and Metallurgical Engineers, the American Society of Mechanical Engineers, the American Institute of Electrical Engineers or the Society of Automotive Engineers.

Robbers looted a registered transcontinental mail car on a Chicago, Burlington & Quincy train on the night of November 14 between the Union Pacific and Burlington stations, Council Bluffs, Iowa. The thief smashed the glass in the mail car door as the train pulled out of the Union Pacific station. Transfer clerks who were at the time in the working mail cars were locked out by the thief, who threw ten sacks of mail out to a confederate and escaped. The check on contents of the sacks is not yet completed.

Members of the San Francisco section of the American Society of Mechanical Engineers were the guests of the Pacific Railway Club at its monthly meeting on November 18, at Oakland, Cal. Charles Green, assistant superintendent of steamers, of the Southern Pacific Company, presented a paper on the water transportation of American railroads, while J. J. Wosser, assistant superintendent of steamers, Northwestern Pacific, presented a paper on ferry transportation on San Francisco Bay. These papers, together with others on the program, were illustrated with stereopticon slides.

The Railway Ticket Protective Bureau was reorganized on November 10 by the various territorial passenger associations. C. A. Fox, chairman of the Central Passenger Association, was elected chairman of the Bureau, and E. E. MacLeod, chairman of the Western Passenger Association, was elected secretary. H. A. Koach was reappointed to the position of Bureau field agent. The policy of the Bureau to make determined efforts to eliminate all ticket scalpers and such other abuses as affect passenger revenues, will be vigorously resumed.

A landslide at 26th street, Pittsburgh, Pa., last week, buried several tracks of the Pennsylvania Railroad at that point, and endangered main-track train movement; and eight steam-shovels, at last accounts, were having a strenuous task in keeping the road open. The trouble started in a street on the top of the high bluff which borders the railroad, on the south side, at that point, necessitating the construction of a bridge 100 ft. long to keep street traffic moving. A considerable section of the railroad's roadbed moved northward, like a glacier, at the rate of 10 ft. a day. Twenty-sixth street is about a mile east of the Union station, and preparations were made for detouring all main line trains by way of the Brilliant cut off and the line on the north side of the Allegheny river.

The American Red Cross, through a special endowment, known as the "William Howard Taft Fund," awards for the best first aid work among railroad men during each calendar year, four prizes, ranging from \$25 to \$100. Competition for these prizes is open to all holders of Red Cross first aid certificates, and in special cases, to others who have been instructed in first aid, life saving or accident prevention, and yet may not hold certificates. In order that these prizes be wisely awarded for the year 1920, the Red Cross desires that any meritorious instance where first aid, life saving or worthy accident prevention has been performed, be reported to the Bureau of First Aid, American Red Cross, Washington, D. C., before December 1, 1920.

Southern in Mississippi Changes Name

Official announcement was made last week that the name of the Southern Railway Company in Mississippi has been changed to the Columbus & Greenville Railroad Company. Hereafter the operations of the company will be carried on under the new name, but under the supervision of the same officers as heretofore.

Annual Dinner of Central Railway Club

The Central Railway Club introduced an innovation at its thirty-first annual dinner by dispensing entirely with speeches and holding a dinner dance. This function was held on November 11 at the Hotel Iroquois, Buffalo, N. Y. It was preceded by the regular business meeting at 2 p. m., at which a paper on Enginehouse Organization, prepared by E. R. Webb, master mechanic of the Michigan Central, was read and discussed.

September Earnings

Virtually complete returns of the railroads for the month of September show that 207 roads, operating 237,000 miles, had a net railway operating income of \$79,876,655, an increase of only 2.8 per cent as compared with September, 1919. This represents a shortage of approximately \$29,000,000 as compared with what the roads should earn in September to have a net return of 6 per cent for the year. Operating revenues show an increase of 23.7 per cent as compared with 1919, while expenses increased 27.2 per cent.

Western Railway Club

The November meeting of the Western Railway Club, held at the Hotel Sherman, Chicago, on November 15, was devoted to the subject of Claim Prevention. A paper was presented by C. H. Dietrich, freight claim agent of the Chicago, Milwaukee & St. Paul, outlining the causes of loss and damage which result in the presentation of claims and setting forth the purposes of the Freight Claim Prevention Congress called by the American Railway Association, in session on that and the following day at the Hotel La Salle, Chicago.

Annual Meeting of the Taylor Society

The Long Day in the Steel Industry, will be the most important subject for discussion at the annual meeting of the Taylor Society, which will be held in the Engineering Societies' building, 29 West Thirty-ninth street, New York, on December 3 and 4. A joint session of the American Society of Mechanical Engineers and the American Institute of Electrical Engineers to discuss this problem, will be held on Friday evening. Horace B. Drury, recently with the Industrial Relations Division of the U. S. Shipping Board, will present a report of a recent survey of labor conditions in the steel mills, and William B. Dickson, vice-president of the Midvale Steel & Ordnance Company, will present the point of view of the manufacturer. The sessions on Friday morning and afternoon will be devoted to the subject of scientific management in the sales department and on Saturday, Standardization of Products will be the topic.

Reductions of Forces

Reductions of railroad forces by the dismissal of considerable numbers of men on short notice, particularly in shops, has been reported during the past week from many places. The Pennsylvania Railroad, in dismissing 1,350 men at the Altoona shops, about 15 per cent of the total force, giving

the men five days' notice, announced that this was to be deemed a permanent reduction in force, not a temporary lay-off. This move was made necessary by a reduction in the volume of repair work and affected all departments except the iron and brass foundries. About 1,500 employees were dismissed from shops on the Central Pennsylvania division of the road and 1,000 on the Philadelphia division. The New York Central dismissed 500 men at West Albany, four-fifths of these being shop men. The Boston & Albany has dismissed about ten per cent of the forces in its principal shops. The New York, New Haven & Hartford has dismissed considerable numbers of men in various departments. Certain shops of the Baltimore & Ohio report dismissals of ten per cent of the employees.

American Railway Development Association

The American Railway Development Association held its semi-annual meeting at Chicago on November 11 and 12. The general sessions were marked by the commissioning of the president to make formal application for membership in the American Railway Association and by the general discussion and recommendations regarding publicity matters to combat misinformation about the railroads.

The association recommended the following policy of publicity regarding rural relations work:

1. Give the farmer facts and statistics regarding railroad operation, showing the amount of freight handled, improvement of equipment, service, etc., need for increased freight rates to maintain proper service and the relatively small effect on cost of shipping agricultural products.
2. Work within all railroad organizations to give all railroad officials and employees facts regarding farm problems, and interpret farm sentiment accurately for them to aid them in solving farm problems relating to railroad service.
3. Give close personal co-operation to reliable farm organizations and all other agencies interested in agricultural development.

The general sessions were followed by the meetings of the two separate sections, agricultural and marketing—industrial, at which special subjects were discussed.

Varied Freight Thefts

In the yard of the Pennsylvania Railroad at Newark, N. J., on the morning of Sunday, November 14, a gang of thieves, with automobile trucks, emptied two or three cars of whiskey (in cases) and alcohol (in barrels). The robbers had first overpowered and kidnapped the single yard watchman and carried him off in an automobile, blindfolded, many miles. Evidently they worked at the cars an hour or two, or longer, without molestation; but finally were driven off, after a pistol fight, by railroad and city police. To the engineman of a switching engine they posed as legitimate truckmen, and asked him to favor them by moving a car, putting on the engine at the same time a case of liquor; but he scented their purpose and called the police.

At Pittsburgh, Pa., on November 12, twelve men, most of them railroad employees, were brought into court on charges of thefts of freight at the Pittcairn yard of the Pennsylvania Railroad. Most of them were released on bail.

At Buffalo, N. Y., on November 3, six masked robbers, armed, got several thousand dollars' worth of goods from a freight train of the New York Central.

At Macon, Ga., on November 12, nine employees of the American Railway Express Company were indicted on charges of thefts of goods in transit.

Operating Statistics for August

The net ton miles of freight handled by the railroads during August were 17.1 per cent greater than for the month of August, 1919, according to the monthly report of operating statistics issued by the Interstate Commerce Commission. The total as reported by the commission was 42,656,000,000, including non-revenue freight and excluding mixed and special trains. The net ton miles per freight train mile were 788 as compared with 777 in August, 1919. The percentage of loaded to total freight car miles was 68.1 as compared with 69.2 and the percentage of serviceable cars was 92.9 as compared with 90.9. The car miles per car day averaged 27.5 as compared with 24.6 and the net ton miles per car day 561 as compared with 479, while the net ton miles per loaded car mile averaged 30.1 as compared with 28.2. This figure exceeds the standard of 30 tons set by the railway executives at their meeting in July.

The statistics showing the cost per freight train mile in selected accounts are made abnormal by the fact that some roads included back pay and other adjustments applying to prior months in the August figures, the exact amount of which, the report says, is not available. The total is given as \$2.46 as compared with \$1.53 in August, 1919. The cost per passenger train mile is given as \$1.33 as compared with 86 cents. For the eight months ending with August the average cost per freight train mile is reported as \$1.94 as compared with \$1.62 in 1919 and the cost per passenger mile as \$1.04 as compared with 88 cents.

The average train load of 788 tons exceeds the trainload in any month during federal control.

Highest Elevations on Principal Western Railroads

The United States Geological Survey, Department of the Interior, has published the following information regarding the highest altitudes on transcontinental railroad lines, supplemented with like data for the Canadian roads:

HIGHEST POINTS ON PRINCIPAL WESTERN RAILROADS OF THE UNITED STATES AND CANADA

Route*	Between—	Elevation (feet)	Nearest station
A. T. S. F....	Kansas City, Mo., and San Francisco, Cal.	7,625	Lynn, N. M.
C. M. & St. P. C.	Chicago, Ill., and Seattle, Wash.	6,322	Donald, Mont.
C. B. & Q....	Omaha, Neb., and Billings, Mont.	4,747	Sparta, Wyo.
D. & R. G....	Denver, Colo., and Salt Lake City, Utah:		
	Via Leadville, Colo.....	10,219	Tennessee Pass, Colo.
	Via Gunnison, Colo.....	10,846	Marshall Pass, Colo.
	Via Durango, Colo.....	10,238	Lizard Head.
E. P. & S. W.	Santa Rosa, N. Mex., and El Paso, Tex.	5,040	Los Tamos, N. M.
	El Paso, Tex., and Tucson, Ariz.	4,746	Continental Divide, near Hachita, N. M.
G. N.....	St. Paul, Minn., and Seattle, Wash.	5,215	Summit, Mont.
	St. Paul, Minn., and Butte, Mont.	6,380	Elk Park Pass, Mont.
L. A. & S. L.	Los Angeles, Cal., and Salt Lake City, Utah:		
	Via Tintic, Utah.....	6,033	Boulter, Utah.
	Via Provo, Utah.....	5,225	Sharp, Utah.
N. P.....	St. Paul, Minn., and Seattle, Wash.:		
	Via Helena, Mont.....	5,573	Blossburg, Mont.
	Via Butte, Mont.....	6,334	Homestake, Mont.
O. S. L.....	Granger, Wyo., and Butte, Mont.	6,908	Kemmerer, Mont.
	Granger, Wyo., and Portland, Oreg.....	6,908	Kemmerer, Mont.
R. I.....	Chicago, Ill., and Colorado Springs, Colo.	6,899	Tiptop, Colo.
	Chicago, Ill., and Santa Rosa, N. Mex.	4,190	Bravo, Tex.
S. D. & A....	San Diego and Calexico, Cal.	3,660	Hipass, Cal.
S. P.....	Ogden, Utah, and Sacramento, Cal.	7,012	Donner Pass, Cal.
	New Orleans, La., and San Francisco.	5,100	Alpine, Tex.
T. & P.....	Fort Worth and El Paso, Tex.	4,550	Allamore, Tex.
U. P.....	Omaha, Neb., and Ogden, Utah	8,006	Sherman, Wyo.
W. P.....	Salt Lake City, Utah, and San Francisco, Cal.	5,907	Flower Lake Tunnel, Nev.
C. P.....	Lake Louise and Stephen....	5,339	Stephen, B. C.
C. N.....	Geikie, Alta., and Lucerne, B. C.	3,713	Mt. Cavell, Alberta.

*The full names of the railroads are as follows: Atchafalpa, Topeka & Santa Fe; Chicago, Milwaukee & St. Paul; Chicago, Burlington & Quincy; Denver & Rio Grande; El Paso & Southwestern; Great Northern; Los Angeles & Salt Lake; Northern Pacific; Oregon Short Line; Chicago, Rock Island & Pacific; San Diego & Arizona; Southern Pacific; Texas & Pacific; Union Pacific; Western Pacific; Canadian Pacific; Canadian National.

Transportation to Be Keynote

Topic at A. S. M. E. Meeting

The importance of the transportation problem to the industries of the country has led the American Society of Mechanical Engineers to give this subject first place on the program of the forty-first annual meeting which will be held at 29 West Thirty-ninth street, New York, December 7 to 10. The keynote session will be held on Thursday and will be opened with a discussion of the railroad situation by Daniel Willard, president of Baltimore & Ohio. C. A. Morse, chief engineer of the Chicago, Rock Island & Pacific, will discuss the need for the proper development of railroad feeders. General F. T. Hines will speak on waterways, and Francis W. Davis, of the Pierce-Arrow Motor Car Company, on motor truck transportation.

At the afternoon meeting, the arrangement of terminals and facilities for handling freight will be discussed by Col.

William Barclay Parsons. Gustav Lindenthal will present the result of his studies of the New York terminal problem.

On Tuesday afternoon, simultaneous sessions of the fuel section, the forest products section, the management section, and the machine shop section, will be held. On Wednesday afternoon, the management section, the railroad section, the design section and the research section will meet. On Friday morning, there will be a general session and meetings of the sections on design, textiles and power development.

Of particular interest to railroad officers are the papers on The Use of Wood in Freight Car Construction, by H. S. Sackett (C. M. & St. P.), and on Machining Railroad Cross-Ties, by D. W. Edwards, to be presented at the forest products session on Monday. The papers to be presented at the railroad session are as follows: Static Adjustment of Trucks on Curves, by R. K. Eksergian; Increasing Capacity of Old Locomotives, by C. B. Smith (B. & M.); and Modernizing Locomotive Terminals, by G. W. Rink (C. of N. J.).

Oil Transportation

A. M. Schoyer, through freight traffic manager of the Pennsylvania, discussed some of the problems relating to the transportation of petroleum and its products at a meeting of the transportation group of the American Petroleum Institute at its annual meeting at Washington, D. C., on November 17. The group meeting was presided over by M. J. Gormley. Mr. Schoyer urged the importance of thorough co-operation between the oil industry and the railroads and pointed to the excellent results which have already been obtained this year from co-operation. He referred particularly to the plan which has been developed to considerable extent by the petroleum industry of giving the railroads shipments in solid train lots. This practice was developed by the Northwestern region under the Railroad Administration, and Mr. Schoyer said the other regions were very glad to follow it. He pointed out, however, that better results could be obtained if solid trains were made up of more than 25 cars. He said that if they are made up of 40 to 50 cars they would be more apt to move over the initial division as a solid train without delay for filling up with other cars. He also urged the importance of notifying the railroads in advance of their requirements. As illustrating the importance of the petroleum traffic, he said that last year the Pennsylvania System had handled $3\frac{1}{2}$ million tons of petroleum and its products, constituting $1\frac{1}{4}$ per cent of the road's tonnage. This, he said, makes a traffic worth cultivating and the railroads want to do their best to solve the problem. He asked that the shippers criticize the railroads freely, but to their faces and not behind their backs, and said that some of the bad service of the past year has been due to the large number of inexperienced men in the employ of the railroads. This condition, he said, is improving and the fact that the railroads have gone back to a period of competition will tend to better service. Also, he said, the slight letting up in the amount of business will tend to better handling on the part of the railroads.

Union Pacific Develops New Safety Organization

As a means of spreading the gospel of safe practice to all of its employees most effectively, the Union Pacific has reorganized its safety department. Heretofore this has consisted of a general safety agent, with three assistants, all of whom had concurrent jurisdiction, and also three mechanical safety inspectors located in the large shops. In place of this organization there is now a general safety agent with five division safety agents and two shop safety inspectors. One division safety agent is assigned to each of the larger divisions with one agent covering two divisions of lighter traffic. The two safety inspectors are assigned to the two larger shops respectively, where they will supervise all operations with a view to promoting safety and also give safety lectures to each employee taken into the force before he is permitted to go on duty. The personnel of this organization will be found in the personal news columns.

Another innovation covering the entire Union Pacific System, including the Union Pacific Railroad, the Oregon Short Line and the Oregon-Washington Railroad & Navigation

Company, is a safety banner contest to be carried on for a period of one year, at the end of which time banners will be awarded on the basis of safety records made under the following conditions: (1) A banner to the system unit making the lowest record in casualties per one million locomotive miles. (2) A banner to one division on each system unit making the lowest casualty record per one million locomotive miles. (3) A banner to the one of the six large shops on the system, i.e., Omaha, Kansas City, Denver, Cheyenne, Pocatello and Portland, making the lowest casualty record per 100 employees. Employees of the St. Joseph & Grand Island Railroad, which is a part of the Central Division of the Union Pacific, will be included in this contest. These banners will be awarded for a period of one year and at the end of the year following if another system unit or division on a system unit or one of the large shops on the system has made a better record in safety than that holding the banner for the preceding year, it will then be entitled to the banner for the ensuing year. It is expected that keen competition will be developed to win these banners and the result of this campaign is looked forward to with interest by the officers and employees of the Union Pacific System.

National Railway Appliances Association

Assigns Exhibit Space

On November 8 the directors of the National Railway Appliances Association held a meeting in the office of the secretary-treasurer, Chicago, and awarded space for the exhibit to be held in the Coliseum at Chicago on March 14-17, 1921. This award provided space for the 159 firms that had made application up to that time and leaves only eight per cent of the total space available still unassigned. The list of firms assigned space to date is as follows:

A. G. A. Railway Light & Signal Company, Elizabeth, N. J.
Adams & Westlake Company, Chicago.
Adams Motor & Manufacturing Company, Chicago.
Air Reduction Sales Company, New York City.
Ajax Forge Company, Chicago.
American Association of Engineers, Chicago.
American Abrasive Metals Company, New York City.
American Car & Foundry Company, New York City.
American Chain Company, Inc., Bridgeport, Conn.
American Hoist & Derrick Company, St. Paul, Minn.
American Kron Scale Company, New York City.
American Manganese Steel Company, Chicago Heights, Ill.
American Spike Company, New York City.
American Steel & Wire Company, New York City.
American Valve & Meter Company, Cincinnati, Ohio.
American Vulcanized Fibre Company, Pittsburgh, Pa.
Anchor Company, New York City.
Armco Iron Culvert & Flume Manufacturers' Ass'n, Middletown, Ohio.
Austin Company, Cleveland, Ohio.
Balkwill Manganese Crossing Company, Cleveland, Ohio.
Barrett Company, New York City.
Benjamin Electric Manufacturing Company, Chicago.
Bethlehem Steel Company, Bethlehem, Pa.
Blaw-Knox Company, Pittsburgh, Pa.
Boss Nut Company, Chicago.
Bryant Zinc Company, Chicago.
Eucyrus Company, South Milwaukee, Wis.
Buda Company, Chicago.
H. M. Byers Company, Pittsburgh, Pa.
Carbic Manufacturing Company, Duluth, Minn.
Carter Bloxonend Flooring Company, Kansas City, Mo.
Central Electric Company, Chicago.
Chicago Bridge & Iron Works, Chicago.
Chicago Flag & Decorating Company, Chicago.
Chicago Malleable Castings Company, Chicago.
Chicago Pneumatic Tool Company, Chicago.
Chicago Railway Signal & Supply Company, Chicago.
Chipman Chemical Engineering Company, Inc., New York City.
Clark Car Company, Pittsburgh, Pa.
Cleveland Railway Supply Company, Cleveland, Ohio.
Copper Clad Steel Company, Rankin, Pa.
Crerar, Adams & Co., Chicago.
Detroit Graphite Company, Detroit, Mich.
Diamond State Fibre Company, Bridgeport, Pa.
Paul Dickinson, Inc., Chicago.
Dillworth, Porter & Co., Inc., Pittsburgh, Pa.
Joseph Dixon Crucible Company, Jersey City, N. J.
Duff Manufacturing Company, Pittsburgh, Pa.
Thomas A. Edison, Inc., Bloomfield, N. J.
Edison Storage Battery Company, Orange, N. J.
Electric Auto-Lite Company, Toledo, Ohio.
Electric Storage Battery Company, Philadelphia, Pa.
Elliott Frog & Switch Company, East St. Louis, Ill.
Eymon Crossing Company, Marion, Ohio.
Fairbanks, Morse & Co., Chicago.
Fairmont Gas Engine & Railway Motor Car Company, Fairmont, Minn.
Federal Signal Company, Albany, N. Y.

H. K. Ferguson Company, Cleveland, Ohio.
 Friction Car Stop Company, Cleveland, Ohio.
 Frog, Switch & Manufacturing Company, Carlisle, Pa.
 General Automatic Scale Company, St. Louis, Mo.
 General Electric Company, Schenectady, N. Y.
 General Railway Signal Company, Rochester, N. Y.
 Gilbert & Barker Manufacturing Company, Springfield, Mass.
 Gould Storage Battery Company, Chicago.
 Graver Corporation, East Chicago, Ind.
 W. & L. E. Gurley, Troy, N. Y.
 Hall Switch & Signal Company, Garwood, N. J.
 Hatfield Rail Joint Manufacturing Company, Macon, Ga.
 Hayes Track Appliance Company, Richmond, Ind.
 Hazard Manufacturing Company, Wilkes-Barre, Pa.
 W. F. Hebard & Co., Chicago.
 Hubbard & Co., Pittsburgh, Pa.
 Imperial Belting Company, Chicago.
 Ingersoll-Rand Company, New York City.
 H. W. Johns-Manville Company, New York City.
 O. F. Jordan Company, East Chicago, Ind.
 Kalamazoo Railway Supply Company, Kalamazoo, Mich.
 Paul J. Kalman Company, Chicago.
 Kaustine Company, Inc., Buffalo, N. Y.
 Kelly-Derby Company, Inc., Chicago.
 Kerite Insulated Wire & Cable Company, Inc., New York City.
 Keuffel & Esser Company, Hoboken, N. J.
 Keystone Grinder & Manufacturing Company, Pittsburgh, Pa.
 Kilbourne & Jacobs Manufacturing Company, Columbus, Ohio.
 Lackawanna Steel Company, Lackawanna, N. Y.
 Layne & Bowler Company, Memphis, Tenn.
 Lehon Company, Chicago.
 Lufkin Rule Company, New York City.
 Lundie Engineering Corporation, New York City.
 M. W. Supply Company, Philadelphia, Pa.
 MacLeod Company, Cincinnati, Ohio.
 MacRae's Blue Book, Chicago.
 Maintenance Equipment Company, Chicago.
 Massey Concrete Products Corporation, Chicago.
 Mercury Manufacturing Company, Chicago.
 Metal & Thermit Corporation, New York City.
 Midvale Steel & Ordnance Company-Cambria Steel Company, Philadelphia, Pa.
 Miller Train Control Corporation, Danville, Ill.
 Monroe Calculating Machine Company, New York City.
 Morden Frog & Crossing Works, Chicago, Ill.
 Mudge & Co., Chicago.
 National Boiler Washing Company, Chicago.
 National Carbon Company, Inc., Cleveland, Ohio.
 National Indicator Company, Inc., Long Island City, N. Y.
 National Lead Company, New York City.
 National Lock Washer Company, Newark, N. J.
 National Malleable Castings Company, Cleveland, Ohio.
 National Water Main Cleaning Company, New York City.
 George P. Nichols & Brother, Chicago.
 North American Engine Company, Algona, Iowa.
 Northwestern Motor Company, Eau Claire, Wis.
 Ogle Construction Company, Chicago.
 Ohio Brass Company, Mansfield, Ohio.
 Okonite Company, Passaic, N. J.
 O'Malley-Beare Valve Company, Chicago.
 Oxweld Railroad Service Company, Chicago.
 P. & M. Company, Chicago.
 Pittsburgh-Des Moines Steel Company, Pittsburgh, Pa.
 Pocket List of Railroad Officials, New York City.
 Positive Rail Anchor Company, Marion, Ind.
 Protective Signal Manufacturing Company, Denver, Colo.
 Pyrene Manufacturing Company, Chicago.
 Q. & C. Company, New York City.
 Rail Joint Company, New York City.
 Railroad Herald, Atlanta, Ga.
 Railroad Supply Company, Chicago.
 Railway Review, Chicago.
 Ramapo Iron Works, Hillburn, N. Y.
 Rawls Machine & Manufacturing Company, Chicago.
 Reade Manufacturing Company, Hoboken, N. J.
 Refinite Company, Omaha, Neb.
 Rensselaer Valve Company, Troy, N. Y.
 Richards-Wilcox Manufacturing Company, Aurora, Ill.
 Roberts & Schaefer Company, Chicago.
 St. Louis Frog & Switch Company, St. Louis, Mo.
 Sellers Manufacturing Company, Chicago.
 Sherwin-Williams Company, Cleveland, Ohio.
 Signal Accessories Corporation, New York City.
 Simmons-Boardman Publishing Company, New York City.
 Simonds Manufacturing Company, Fitchburg, Mass.
 T. W. Snow Construction Company, Chicago.
 Southern Hardware & Supply Company, St. Louis, Mo.
 Steel Sales Corporation, Chicago.
 Templeton-Kenly Company, Inc., Chicago.
 Toledo Scale Company, Toledo, Ohio.
 Torchwell Equipment Company, Chicago.
 Track Specialties Company, New York City.
 Union Switch & Signal Company, Swissvale, Pa.
 U. S. Wind Engine & Pump Company, Batavia, Ill.
 Verona Tool Works, Chicago.
 Volkhardt Company, Inc., Stapleton, N. Y.
 Walls Frogless Switch & Manufacturing Company, Kansas City, Mo.
 Waterbury Battery Company, Waterbury, Conn.
 Wayne Oil Tank & Pump Company, Fort Wayne, Ind.
 Western Electric Company, Inc., New York City.
 Woolery Machine Company, Minneapolis, Minn.
 Wyoming Shovel Works, Wyoming, Pa.
 Yale & Towne Manufacturing Company, Stamford, Conn.

Traffic News

On the Pennsylvania Railroad System in October the average daily record of freight forwarded was nearly 24,000 loaded cars, or over 6,000,000 tons a week. The best previous monthly record was that of October, 1919, when the daily average of loaded cars was 23,700.

The Pennsylvania has re-established its freight and passenger agencies in ten leading traffic centers: Dallas, Tex.; Minneapolis, Minn.; Kansas City, Mo.; Los Angeles, Calif.; New Orleans, La.; Omaha, Neb.; Boston, Mass.; Seattle, Wash.; and San Francisco; and a freight agency at New Haven, Conn.

The Interstate Commerce Commission has issued a partial advance summary of traffic on Class I steam roads for the month of September covering roads operating 179,000 miles. This shows a total of 29,483,331 net ton miles of freight handled, as compared with 27,652,863 net ton miles in September, 1919. There was an increase in all districts except New England.

The Transportation Club of Peoria (Ill.), the activities of which were curtailed during the war, was re-established on November 12. C. H. Gillig was re-elected president and O. B. Eddy, assistant traffic manager of the Peoria Association of Commerce, was elected secretary-treasurer. The club is planning to hold monthly dinners, the first to take place in December.

Western roads continue to restore pre-war passenger trains, as well as to add new ones. The Chicago, Milwaukee & St. Paul resumed its "Pacific Limited" between Chicago and San Francisco on November 15. This train leaves Chicago at 10:45 a. m., arriving at San Francisco at 8:30 a. m. the third day. It connects with the 20-hour trains from New York. The Chicago, Rock Island & Pacific will restore the "Golden State Limited" on November 21. This train will leave Chicago daily at 6:30 p. m., and will arrive in Los Angeles at 1:10 p. m. the third day. It will carry through sleeping cars to San Diego and Los Angeles, and also to Santa Barbara, the latter being a new service. The Chicago & North Western has reduced the time of the "Overland Limited" three hours, 40 minutes, the train leaving Chicago at the usual time, but arriving in San Francisco at 1:30 p. m. instead of 5:10 p. m., and has put on two new trains. The "Continental Limited," a new southern California train, leaves Chicago daily at 10:30 a. m., arriving in Salt Lake City at 8:20 a. m., and in Los Angeles at 9:30 a. m., a journey of 73 hours. The other new train, the "Oregon-Washington Limited," will leave Chicago daily at 9:30 p. m. and arrive in Portland at 7:30 p. m., 72 hours. The Atchison, Topeka & Santa Fe and the Southern Pacific have put on several new trains on the Pacific coast. The "Shasta," of the Southern Pacific, is restored, leaving San Francisco at 4 p. m. daily. It arrives at Portland at 10 p. m., the second day, and at Tacoma at 4:50 a. m., and Seattle at 6:30 a. m. the third day. Through standard sleepers will be run to Seattle.

The Pennsylvania's Milk Trains

During the month of September the Pennsylvania Railroad carried to Philadelphia, New York and Baltimore 14,000,000 quarts of milk, an increase of about 1,000,000 quarts over September, 1919.

The Philadelphia delivery, 10,871,009 quarts, represents 65 per cent of the milk delivered from all sources in Philadelphia during the month. Seventy-five per cent of the milk for Philadelphia was collected within a radius of 60 miles from the city. The remaining 25 per cent was hauled from points between 400 and 500 miles distant from the city.

The Pennsylvania's delivery of milk to New York City all goes to the borough of Brooklyn, 2,316,400 quarts in September. During June, July, August and September, Atlantic

City, Asbury Park and other New Jersey coast resorts received over the Pennsylvania Railroad 40,000 quarts of milk a day, every can hauled 500 miles.

Passenger Traffic Statistics

Revenue passengers carried on railroads in the United States during the first seven months this year numbered 717,783,896, an increase of 51,398,024 over the number carried during the corresponding period last year, according to statistics compiled by the Interstate Commerce Commission. Revenues derived from passenger service totaled during that time \$686,513,103, or \$35,684,198 more than was received during the corresponding months last year. Passenger miles for the 1920 period were 26,307,520,000, as compared with 25,856,902,000 during the same months in 1919. The average number of miles traveled per passenger this year was 36.65 miles, a decrease of 2.1 miles.

Conference on Employment and Education

The first annual conference on employment and education conducted by the American Association of Engineers, was held at the Congress Hotel, Chicago, November 12, 1920. The conference was attended by educators, employment managers, engineers, experts on vocational and industrial education and others interested in education and employment. This meeting, which was not expected to accomplish more than to stimulate thought on the combined question and to set forth the importance of solving the problem of education and employment simultaneously, brought forth two resolutions, both of which were adopted.

The first resolution is as follows: "Resolved, That personnel work is necessary in engineering schools and should be provided wherever possible."

The other resolution reads: "Resolved, That it is the sense of the educational delegates that the best teachers in the schools training engineers, should be placed in charge of the most elementary work." These resolutions were introduced by Dean E. J. McCaustland, of the University of Missouri.

Rivers and Harbors Congress

The call has been issued for the sixteenth convention of the National Rivers and Harbors Congress at Washington, D. C., on December 8, 9 and 10. The call for the meeting says in part:

"No argument is needed to prove that the fundamental need of the country today is a radical increase of our transportation facilities. The merchant knows it—because he has to wait for weeks or months for goods he ought to have got in a few days. Manufacturers and mechanics, mine owners and mine workers, know it—when mines and factories must run on half time, or shut down entirely. The farmers know it—because they have just harvested one of the greatest grain crops ever known and 20 per cent of last year's crop is still unmarketed. Bankers know it—when hundreds of millions of dollars in credits are 'frozen' because their customers cannot get the needed transportation. Railroad men know it—and, for the first time in history, not only admit it privately but publicly advertise the fact.

"In 1916 a committee of experts, after an elaborate investigation, reported that, if traffic should continue to increase during the succeeding 10 years at the same rate as it had done during the preceding 20, the railroads would be obliged to spend \$1,500,000,000 a year, or \$15,000,000,000 in all, to enable them to keep up with it. At the instance of a group of New York bankers another investigation was recently made by a committee of eminent engineers, who reported that, at present prices, it would take at least \$18,000,000,000 to put the railroads into condition to handle the traffic of the country with reasonable promptness and efficiency.

"Can any reader of these lines suggest a source from which the railroads can secure the eighteen or twenty billions which the experts say they need? The late James J. Hill said, in October, 1914: 'To imagine the amount needed can be secured when there is such a poverty of capital as there will be for 10, 20, possibly more years to come, is absurd.'"

Commission and Court News

Interstate Commerce Commission

The Interstate Commerce Commission has reopened the case involving regulations for the payment of freight charges for further hearing.

The commission has further suspended, until December 17, the operation of Rule No. 23, of F. W. Gomph, agent, Supplement No. 9 to I. C. C. No. 378, which rule provides that rates published in the tariff are payable in United States currency or its equivalent.

The commission, acting on numerous protests against the proposed increased charges for diversion and reconsignment on fruit and vegetables, announced by various roads, to become effective December 1, announces an informal hearing November 23 at Washington.

Wisconsin Passenger Fare Case Argued

Oral arguments were heard by the Commission at Washington on November 12 in the Wisconsin passenger fare case arising from the situation caused by the Wisconsin state passenger fare law, which prohibited an increase in state fares corresponding to those allowed for interstate traffic by the Interstate Commerce Commission. In addition to counsel for the railroads of the state and representatives of the state commission, arguments were presented by Alfred P. Thom, of the Association of Railway Executives, and John E. Benton, general solicitor of the National Association of Railway and Utilities Commissioners. The arguments involved particularly the question as to whether the power of the Interstate Commerce Commission to correct discriminations in state rates was broadened by the transportation act. The question was also raised by some of the commissioners as to how long the commission should be expected to wait, before taking action, to give the state legislators an opportunity to change the state law on the subject. Mr. Benton took the position that the commission should wait until the legislature is in session, while the railroads took the position that the commission's power to act began as soon as the discrimination existed. Commissioner Aitchison pointed out that if the federal law had been passed immediately after the biennial sessions of the legislature in many states it would be necessary to wait for a year and nine months if it were necessary to await the regular session of the legislature. He also pointed out that it would have been entirely possible to have called the legislature in a special session to consider fare legislation. At the conclusion of the argument Mr. Thom asked the commission to do all in its power to expedite the proceedings in the Michigan, Iowa and Minnesota cases, which are particularly important.

State Commissions

R. C. Mulholland, representing the Amador Central and fifteen other short line roads operating in California, has applied to the California Railroad Commission for authority to put into effect, on 30 days' notice, certain changes in demurrage rules and increases in charges, in order to secure uniformity with national car demurrage rules and charges.

Personnel of Commissions

W. H. Harland, heretofore in the service of the Bureau of Valuation, of the Interstate Commerce Commission, has been appointed senior railway signal engineer for the Bureau of Safety, the position formerly occupied by George E. Ellis; headquarters Washington. In the valuation work Mr. Harland was in charge of the signal, electrical, telegraph and telephone matters in the Eastern district.

Foreign Railway News

England Buys Railway Ties From British Columbia

LONDON.

The London Times reports that an order for 20,000,000 ft. of railway ties has been placed with a firm in British Columbia for use in Great Britain.

Eight-Hour Day in Switzerland

LONDON.

The London Times reports that a measure in favor of an eight-hour day for the employees of the Swiss railway, postal, telegraph and telephone services has been carried on a referendum by 360,000 votes to 271,000, 67 per cent of the electors voting.

Rate Increases in Italy

The latest increases in passenger fares on trains and trolleys in Italy bring the maximum increase to 180 per cent over the pre-war charges and the minimum increase to 100 per cent, according to reports from Rome. The increase in the trolley fares ranges from six cents to fifteen cents, or 50 per cent more than was charged by the taxi-cabs before the war.

Electrification Contemplated in Argentina

The Central North Argentine is having a study made with the view of electrifying its line from Cordoba to Cruz del Eje, a distance of 93 miles, according to reports from the American ambassador at Buenos Aires. The line is said to have a heavy passenger traffic and is favorably situated for recourse to hydro-electric power. The Bureau of Foreign and Domestic Commerce, Washington, D. C., is in possession of the details of the project and will put American concerns interested into connection with the proper officers of the company.

Death of Prominent Mechanical Engineer

LONDON.

C. J. Bowen Cooke, chief mechanical engineer of the London & North Western, died October 19. Mr. Bowen Cooke entered the Crewe works of the London & North Western as a premium apprentice in February, 1875, and in 1880 was appointed assistant to the superintendent of the running department for the southern division. In 1899, when the running departments of the London & North Western were put under one jurisdiction, he became assistant superintendent for the southern division, which position he held until June, 1909, when he was appointed chief mechanical engineer.

London's "Safety First" Council

LONDON.

England is making great efforts to stimulate interest in the "Safety First" movement, and has devised an essay competition for children of railway employees. The contest is open to boys and girls under 16 years of age either of whose parents is employed by a railway company and who resides within 20 miles of Charing Cross, London. The papers are to deal with the avoidance of accidents on railways. The prizes offered are: First £3 (approximately \$12), second £2 (approximately \$8), third £1 (approximately \$4), 14 prizes of ten shillings each (approximately \$2), and 28 prizes of 5 shillings each (approximately \$1).

Extensive Construction in Dutch East Indies

Plans for improvements to the railways of the Dutch East Indies, involving the construction of 6,944 miles of new lines, have been made public recently by the general secretary of the government, according to reports from Consul J. F. Jewell at

Batavia, Java. The program outlined will require ten years for completion and will embrace work in Java, Sumatra, Celebes, Borneo and other islands of the archipelago.

China on Verge of Famine

PEKING.

Political news in China has given way entirely as the extent and degree of famine conditions have become better known. Apparently the monumental work of Hoover in stricken Belgium must be surpassed in China during the coming winter, or a population greater than that of all Belgium will perish. By the few people who knew, the situation has been viewed with anxiety all summer. First the spring crop withered just before it should have filled, due to lack of moisture. Then the summer crop either could not be planted, or else soon shrivelled from the drought and hot winds. Locusts in some localities even took the little green that was left. Still the proverbial luck of China was depended upon to bring late rains which would mature sweet potatoes and buckwheat enough to get over the winter. In the last three weeks, however, this hope has faded, and a region roughly 300 miles north of the Yellow river and 100 miles south of it, and extending from close to the east coast westward, no one quite knows how far, is without food for man or beast and without seed for next year's planting. Approximately 40,000,000 people are known to be affected. Twenty-five million are in straits, and at least 10,500,000 will perish if relief measures of heroic proportions are not forthcoming before cold weather sets in. Lack of communication has prevented knowledge of conditions in other regions, and whole villages have started migratory movements which merely lead them to another stricken district and back to the home soil to die.

What this means to the business of north China is vaguely felt, but probably is not widely realized. The price of food is now double that during normal conditions in every town of North China. What it will be next year, with no farmers to plant a crop may be imagined. If rural China perishes this year, urban China perishes next year. The vast population of craftsmen, merchants, porters, etc., who live upon the commerce of the country, depend upon the purchases by the rural community as a foundation. With no rural buyers of their wares, the industrial and commercial interests of north China will have scant means for purchasing food supplies abroad, and still less for buying the usual articles of imported luxury. Unless the famine can be effectively countered, north China as a factor in the world's commerce drops to the vanishing point.

RAILWAYS WILL SUFFER, TOO

International finance also comes in for its jolt. Some \$300,000,000 of mortgage bonds on Chinese government railways are held abroad. The man who got blood from a turnip will have to be brought to China to get the interest on these bonds out of the earnings of the railways. Nor will likin or maritime customs securities be of much avail, if trade stops. The ravages of the Taiping rebellion were not more appalling than will be the effects of this famine, if nothing be done to meet it.

In 1918 gross operating revenues of the Chinese government railways were in round numbers \$77,650,000. When revenues derived from government service, and similar items are subtracted, the actual commercial revenue is left at about \$70,000,000. Of this \$25,000,000 was passenger revenue and \$40,000,000 freight revenue, leaving \$5,000,000 to come from several miscellaneous sources. Out of this \$40,000,000 of freight revenue nearly \$20,000,000 came from agricultural and animal products. What will happen both to passenger revenue and to revenue from agricultural products next year is plain to be seen. What effect this will have upon the ability of the railways to meet their interest obligations follows as night the day. To be sure, the traffic in agricultural products on lines like the Peking-Mukden and the Shanghai-Nanking, which run from regions of plenty to regions of want, will be heavy, for there is still a considerable purchasing power in these districts. The traffic in live animals is heavy now. In a few weeks practically every animal in the stricken districts will have been sold—for a tenth of its normal value—and shipped out. Traffic in 1920 will hold up—but what about 1921?

RELIEF MEASURES

The Peking government is alarmed. It has ordered reduction in grain rates from the food-producing points to famine points and increases in the opposite direction. It has shipped consider-

able amounts free. Government officials, in their private capacity, are organizing vast relief committees to which they are contributing liberally. Action in this private way will be more swift and efficient than by government agents as such. Red tape will be eliminated, and a degree of co-operation with foreigners, even of foreign supervision, will be possible, which the government, as such, would not consider safe. Almost over night, the minds of all people have turned to the subject of public works as a means of alleviating the distress and at the same time achieving something substantial. Though not formally decided upon, there is little doubt that the method of operation will be the division of the population into two classes—able-bodied and helpless. The able-bodied, of both sexes, will be assembled upon jobs of public work, such as river dikes, highway construction, railway building, irrigation projects. Grain will be purchased by a centralized agency, financed by the combined funds of all relief organizations. Food kitchens will be established at works and in villages where the helpless will be concentrated. Each class will be put on a ration, and will have food tickets issued to them by the directors in charge, which tickets will be surrendered to the food kitchens. The able-bodied will secure their tickets only by the performance of a minimum stint of work. Food tickets will be carefully checked up against issues of grain to any kitchen, and on jobs against quantities of earth moved, rock broken, masonry in place, etc. In this way funds will be stretched to the limit in the way of relief, and at the end of the season it is thought that works worth every dollar that has been expended will stand to show as a clear gain.

The Ministry of Communication has authorized the building of two short railways, as a beginning. One of these is the line from Shih-chia-chuang to Tsangchow, which will serve to connect the province of Shansi with Tientsin more directly, and will pass through one of the worst famine districts. Another will be the line from Cheefoo to a connection on the Shantung line, probably at Weihien. At the same time, work is to be pushed on the extension of the line now building toward Suiyuan on the Mongolian border. It is sincerely hoped that funds will shortly be available from the Dutch-Belgian loan for the continuance of work on the Lung-Hai line, for this also traverses a famine district. The Siems-Carey Grand Canal project is another upon which only the hesitation of New York financiers stands in the way. Several other railway contracts have been laying quiescent for some years, which ought to be awakened to activity in this emergency. Some of these are held by financial interests whose investments in other lines in China are in jeopardy from the famine. It is not a matter of mere friendship; it is good business to put into these constructive enterprises every dollar which is necessary to keep alive this vast rural population in north China.

CHANGES IN RAILWAY PRACTICES

The use of depreciated bank notes in payment of freights and fares upon Chinese government railways has now been stopped by order of the new Minister of Communications, Yeh Kung-cho. This affected only the Peking-Hankow and Peking-Suiyuan railways, as other lines had discontinued accepting this paper some time ago. However, in Manchuria the military Tuchun has forced the Peking-Mukden railway to accept notes for the time being.

A monumental departure in railway methods in China is announced to begin January 1, when the railways will assume full responsibility for shipments. Hitherto, except on the Shanghai-Nanking line, all shipments have been at owner's risk, necessitating sending along a watchman with every consignment, or the use of a forwarding company as an agent. Through billing of goods begins on the same date, auditing of invoices to be made in the clearing house located in the Ministry of Communications.

An improved system of reports to facilitate car distribution is under consideration by the ministry and will be submitted to a conference of the traffic managers for perfection and approval in October.

The engineering conference appears to have struck a snag on the standard specifications for steel in rails and the tensile strength of bridge materials. It appears that these have characteristics which differ sharply with each principal manufacturing nation represented on the Chinese railway system. Hence it will be necessary for the ministry to decide arbitrarily upon standard specifications.

Equipment and Supplies

Government Locomotives For Sale

The War Department has again offered for sale 56 of the 200 Decapod locomotives originally built for the Russian government. Eighty-seven of these locomotives were sold to American railroads and the remaining 113 were sold earlier in the year to a Washington law firm. The sale was made, however, under a contract which provided that the locomotives should not in any way be turned over to the Russian Soviet government. The sale has apparently been cancelled, for the War Department is now negotiating for the sale of 56 locomotives now located at Tulleytown Arsenal, New Jersey, and it is understood that the price will be approximately \$25,000 each, as is and where is.

Locomotives

THE UNION PACIFIC is inquiring for 1 Mikado type locomotive.

THE WESTERN PACIFIC is inquiring for 10 Mikado type locomotives.

THE LOUISVILLE & NASHVILLE is inquiring for 16 light Mikado type locomotives and 10 switching locomotives.

THE IMPERIAL TAIWAN RAILWAY, Japan, is inquiring, through the locomotive builders, for 1, 2-6-2 type locomotive.

THE NORFOLK & WESTERN has authorized the construction of 10 Mountain type locomotives at its Roanoke shops.

THE GREENBRIER, CHEAT & ELK has ordered 1, 120-ton Shay locomotive from the Lima Locomotive Works. This locomotive is to be equipped with a superheater.

THE SOLVAY PROCESS COMPANY, Syracuse, N. Y., has ordered 1, 0-4-0 type locomotive from the American Locomotive Company. This locomotive will have 13 x 20 in. cylinders, and a total weight in working order of 65,000 lb.

CHARCOAL IRON COMPANY OF AMERICA, Detroit, Mich., has ordered one consolidation type locomotive from the American Locomotive Company. This locomotive will have 18 by 24 in. cylinders and a total weight in working order of 124,000 lb.

NATIONAL RAILWAYS OF MEXICO.—Florian & Co., Ltd., importers and exporters, 52 Wall street, New York, confirm the report that they have closed a contract with the Mexican government for the delivery of \$20,000,000 of railroad equipment and material. The negotiations were completed in Mexico City and the contract is signed by the Minister of Railways and the National Railways of Mexico. The contract calls for the delivery of locomotives, cars and material for section houses. Certain credits have been extended to Mexico in this connection which are properly secured; all financial arrangements in connection with this contract have been completed. Florian & Co., Ltd., further confirm the report that the purchase of the equipment will be made through their New York office. As reported in the *Railway Age* of November 5, negotiations were under way for financing the purchase of 300 locomotives and 6,000 freight cars for the National Railways of Mexico.

Freight Cars

THE LONG ISLAND RAILROAD is inquiring for 10 caboose cars.

THE ATLANTIC COAST LINE, reported in the *Railway Age* of September 24 as being in the market for 100 phosphate cars, has withdrawn its inquiry for these cars.

THE SOUTH AFRICAN RAILWAYS have ordered 500 four-wheel cattle cars from the Clayton Wagon Company, England, and have also placed orders for 100 eight-wheel bogie wagons in England.

THE NATIONAL RAILWAYS OF MEXICO, reported in the *Railway Age* of August 27, as being in the market for 50 tank cars of 12,000 gallons capacity, has ordered 100 of these cars from the

American Car & Foundry Company, and is also asking the Standard Tank Car Company for bids on 60 narrow gage 6,000 gallons capacity tank cars.

THE MINNEAPOLIS & ST. LOUIS is in the market for about 1,500 freight cars.

THE NORTHERN PACIFIC is considering the purchase of 1,000 additional freight cars.

THE KANSAS CITY, CLAY COUNTY & ST. JOSEPH RAILWAY is inquiring for 5 cars.

THE WESTERN MARYLAND is inquiring for 100 steel hopper car bodies of 55 tons capacity.

Passenger Cars

THE NATIONAL RAILWAYS OF MEXICO have bought from the Pullman Company 40 second-hand tourist cars and are negotiating with the same builders for 100 additional cars.

Iron and Steel

THE ERIE has ordered 20,000 tons of rails from the United States Steel Corporation.

THE BALTIMORE & OHIO has ordered 30,000 tons of rails from the United States Steel Corporation.

Signaling

THE GRAND TRUNK has ordered from the General Railway Signal Company, Rochester, N. Y., a model 2, unit-lever-type electric interlocking for Pontiac, Mich. The order includes two-arm, upper quadrant signals, upper quadrant, one-arm, electric-lighted solenoid dwarf signals, clockwork time releases, relays, model 4a switch machines, transformers and other apparatus. The machine will have 22 working levers and 14 spare spaces and will be installed by railroad company's forces.

Trade Publications

PRESERVING WOOD ROOF DECKS.—The Barrett Company, New York, has issued two folders devoted to the preservation of wood roof decks and mine timbers by the use of carbosota. The various means of applying this preservative are discussed and include such methods as brushing, spraying and dipping or the open tank method.

THE SKINNER CHUCK COMPANY, INC., New Britain, Conn., has recently adopted a new trade mark. It shows an alligator in the form of the letter S, superimposed on a solid black circular background, with the words "Skinner Chucks" around the outside. The alligator was chosen as the symbolic figure best suited to the exploitation of Skinner Chucks, because the alligator is famous for its wonderfully strong jaws and long life.

WELDING AND CUTTING APPARATUS.—A 36-page catalog has been issued by the Bastian-Blessing Company, Chicago, covering the complete line of gas welding and cutting apparatus manufactured by that company. In addition to illustrations and descriptions of the individual items of equipment manufactured, the catalog also describes 10 complete sets of apparatus, each containing the full quota of equipment for carrying out some particular class of work.

GRAB BUCKETS.—The Blaw Knox Company, Pittsburgh, Pa., has recently issued two small folders, descriptive of its line of excavating and reclaiming buckets. One of these folders describes the Blaw bulldog bucket, which is designed for especially heavy service, such as involves the handling of broken stone and hard ore. Photographs and illustrations show the use of this bucket, and diagrams and tables give the properties and principal dimensions of the five sizes of this bucket. The smaller folder discusses the principles of lever arms as applied to the design of Blaw buckets.

Supply Trade News

A. S. Harvey has been appointed general sales manager of the United States Graphite Company. His new headquarters will be at Saginaw, Mich.

C. O. Poor, president and general manager of the General Railway Signal Company of Canada, Ltd., Montreal, Que., has resigned to enter the employ of Geo. W. Goethals & Co., 40 Wall street, New York. Mr. Poor's headquarters are at Rockland, Me.

The Blaw-Knox Company (Blawnox), Pittsburgh, Pa., has established a new sales district in the South, with headquarters at Birmingham, Ala. Prescott V. Kelly, formerly connected with the executive sales department at Pittsburgh, is in charge of this office, which is located in the American Trust Bldg.

Anton Becker, assistant to president of the Ralston Steel Car Company, Columbus, Ohio, has been elected vice-president to succeed F. E. Symons, who has been elected president, as noted in the *Railway Age* of November 12. The other officers of the company are F. A. Livingston, secretary and treasurer, and L. C. Roy, assistant secretary and assistant treasurer.

Alfred J. Babcock, president of Manning, Maxwell & Moore, Inc., New York, who retired in May, 1920, on account of ill-health, died on October 30, in London, England, after a short illness. He was born at Brookfield, N. Y., in 1850, and served in the United States Army from 1867 to 1871. He took a law course at Ann Arbor, and practiced law in Denver, Colo., from 1882 to 1884.



A. J. Babcock

Mr. Babcock entered the machinery business in Chicago with the Fay & Egan Company and later entered the employ of Manning, Maxwell & Moore, Inc., at Chicago, as manager of that branch. About seven years ago he came to New York as assistant to president, and later was made president. He retired from active service in May, 1920, on account of continued ill health.

The name of the selling organization which C. C. Bradford recently formed, as noted in the *Railway Age* of November 12, has been changed from the Manufacturers' Sales Company, to the Bradford Sales Company. The offices of this company, which will represent not more than two manufacturers as a district sales office of each, are located at 340 Leader-News building, Cleveland, Ohio.

E. P. Williams, formerly with the McJunkin Advertising Agency, and later director of field work, Bureau of Market Analysis, Inc., has joined the staff of the Independent Pneumatic Tool Company, Chicago, manufacturers of Thor air and electric tools. Mr. Williams will be located in the general offices, Chicago, and will have charge of the direct by mail advertising and sales promotion department.

The Graver Corporation, East Chicago, Ind., manufacturers of steel tanks and general plate construction, oil refinery equipment, water softening and purifying equipment, announces the opening of branch offices in the following cities: New York, at 280 Broadway; Pittsburgh, Pa., 62 Conestoga building; Kansas City,

Mo., 1001 Gloyd building; Cincinnati, Ohio, 220 Gwynne building; Toledo, Ohio, 314 Nicholas building; and San Francisco, Cal., 312 Balboa building.

Godfrey Gort, general sales manager of the **L. S. Brach Manufacturing Company**, Newark, N. J., manufacturer of lightning arresters and other signaling specialties, has been elected vice-president and general manager. Mr. Gort has had a long experience in signal work on railroads, having served on the Interborough Rapid Transit Company, the Hudson & Manhattan, the Norfolk & Western and the Illinois Central. He has been with the Brach company since 1913, first serving as construction engineer at New York. He remained in that position until 1915, when he was appointed western representative at Chicago. Later he became the general sales manager at New York. On October 1 of this year he was elected vice-president and general manager.

John A. Talty, assistant superintendent of equipment and equipment inspector for the New York Public Service Commission, Second district, has taken a position as special engineer with the **Franklin Railway Supply Company**, New York. Mr. Talty began railway work in 1883 as freight brakeman on the Erie Railroad. He consecutively served as foreman and locomotive engineman on that road and then as air brake instructor on the Westinghouse air brake instruction car on the Erie. Later he took a similar position with the Scranton Correspondence School. From 1900 to 1910 he served as road foreman of engines on the Delaware, Lackawanna & Western. In the latter year he joined the force of the public service commission as assistant supervisor of equipment and equipment inspector, inspecting locomotives and cars and investigating accidents, and he now leaves that position to go to the Franklin Railway Supply Company, as above noted.

L. C. Wilson, for the past two years general sales manager of the **Chain Belt Company**, Milwaukee, Wis., has been elected secretary of the **Federal Malleable Company**, West Allis, Wis., manufacturers of malleable castings, malleable chain and the Rapid molding machine. Mr. Wilson, after graduating from Yale University, began his business career as a salesman with Harbison-Walker Refractories Company, Pittsburgh. In 1917 he became associated with the Chain Belt Company and served as assistant to the vice-president until his appointment as sales manager. **Clifford F. Messinger**, who is also a graduate of Yale University, and has been with the Chain Belt Company since 1909 in various capacities, including that of advertising manager, manager of Rex concrete mixer sales and assistant to the vice-president, has been appointed sales manager of the Chain Belt Company, to succeed Mr. Wilson.

S. T. Callaway, of the firm of Callaway, Fish & Co., New York, and his associates have acquired a substantial interest in and are financing the **Elvin Mechanical Stoker Company**, and Mr. Callaway has been elected president of the company. **A. G. Elvin**, the inventor of the Elvin mechanical stoker, who is largely interested in the company, has been elected vice-president and treasurer. Mr. Elvin is also the inventor of the Elvin driving box lubricator, the Franklin grate shaker and the Franklin fire door, and other successful economy producing devices in the steam locomotive specialty field. **S. T. Whitaker**, of the law firm of Hardy, Stancliffe & Whitaker, attorneys for the company, has been elected secretary. The directorate of the company includes the officers as mentioned above, and **E. M. Richardson**, of the Sherwin-Williams Company. A long term contract has been entered into with the American Locomotive Company, under which the stoker will be manufactured for this company by the American Locomotive Company, at its Schenectady works, thereby enabling the company to accept immediately contracts in quantity for stokers.

THE TICKET DATER should be always in good condition and the die clean. In one week a certain ticket auditor received 286 foreign tickets either undated or with stamp so dim or blurred as to be undecipherable. How does your ribbon look? How does it behave?

Railway Construction

ALBERTA & GREAT WATERWAYS RAILWAY.—This company has awarded a contract to the Northern Construction Company, Edmonton, Alta., for the construction of a line from Lac La Biche, Alta., to the present end of the road at Mile Post 272, a distance of 159 miles. The project, which is already under way, will involve the construction of a 125 ft. wooden, Howe truss, crossing the Christina River at Mile Post 195.

CANADIAN PACIFIC.—This company is asking for bids for the grading in connection with the construction of a branch line north from Kipawa, Que., to the Quinze River. The total length of the new line will be 68 miles, including a branch, 8 miles in length, to Ville Marie on the east shore of Lake Temiskaming. The first 30 miles of the line is entirely in rock country and the remainder traverses clay, gravel and sand. When grading is completed the company proposes to complete the work with its own forces and small contracts for buildings, fences, etc. There will be few bridges of any importance, the largest being a 500-ft. steel viaduct, 50 ft. high, over the Otter River. The principal commodities which the new line will carry are pulp wood and agricultural products, the country around the northern end of the line being well populated and under cultivation.

CANADIAN NATIONAL.—This company is advertising for bids for the clearing, fencing, grading, culverts and bridge substructures on a 12-mile connection which it proposes to construct from Rinfret Junction, Que., to Fresniere.

COLORADO & SOUTHERN.—This company will construct telephone despatching circuits from Denver, Col., to Cheyenne, Wyo., 155 miles; Cheyenne to Wendover, Wyo., 120 miles; and Pueblo, Col., to Texline, Tex., 224 miles.

FORT WORTH & DENVER-CITY.—This company contemplates the erection of telephone despatching circuits on its entire mileage, 453 miles, the work to be handled by company forces.

KETTLE VALLEY.—This company has awarded a contract to P. J. Salvus, Penticton, B. C., for the construction of a line from South Penticton, B. C., to Dog Lake, a distance of approximately 2½ miles.

MICHIGAN CENTRAL.—This company is contemplating extending its electric yard facilities on both sides of the Detroit River at Detroit, Mich.

MISSOURI, KANSAS & TEXAS.—This company, in co-operation with the city of Dallas, Tex., has completed its project of grade elimination at Dallas. The improvement, which consisted of raising the railway track at five street crossings, cost approximately \$800,000.

QUEBEC & CHIBOUGAMOU.—This company will construct a 400-mile line from Quebec to Chicoutimi and thence to Lake Chibougamou. The first 120 miles of this line has already been located and contracts for grading, track laying, etc., for this section will be let shortly. The second section of 130 miles is now being surveyed. The maximum grade on the new line will be 1 per cent and the maximum curvature 6 degrees. There will be five important steel bridges. The principal commodities the new line will carry are pulp wood, paper, fish, iron ore and grain. The company has its offices at 111 Mountain Hill, Quebec. This line will be subsidized by land grants from the government.

ST. LOUIS-SAN FRANCISCO.—This company has awarded a contract to the William McDonald Company, St. Louis, Mo., for the construction of a frame and concrete passenger station at Wister, Okla., to cost about \$36,000.

WESTERN PACIFIC.—This company has awarded a contract to the Utah Construction Company, Ogden, Utah, for the grading in connection with a new line to be built from Niles, Cal., to San Jose, a distance of 32 miles.

Railway Financial News

ARKANSAS RAILROAD.—This company, which has recently taken over the property of the Gould Southwestern, has filed an application with the Interstate Commerce Commission for a certificate authorizing it to operate the line from Gould, Ark., to Star City, 17.8 miles, and also for permission to retain any excess earnings over 6 per cent on its value, as provided in the transportation act for new roads.

BALTIMORE & OHIO.—Governor John J. Cornwell of West Virginia has been elected a director to succeed J. G. Schmidlapp, of Cincinnati, deceased.

BANGOR & AROOSTOOK.—This company has applied to the Interstate Commerce Commission for authority to issue equipment trust certificates maturing serially to 1936, of which \$140,000 are prior lien certificates at 7 per cent and \$180,000 deferred lien certificates at 6 per cent, to be used to provide funds for the purchase of six Consolidation locomotives. The certificates have been underwritten by the First National Bank of Bangor, Me. The company also asked authority to give 15 promissory notes, maturing serially for 15 years, to the amount of \$180,000 at 6 per cent to the United States Treasury, for a loan to assist the company in purchasing the locomotives.

CHESAPEAKE & OHIO.—This company has applied to the Interstate Commerce Commission for authority to issue \$50,225,000 of capital stock from time to time up to April 1, 1936, in conversion of \$40,180,000 of bonds.

COLUMBUS & GREENVILLE.—A notice, dated November 6, 1920, states that, by amendment of its charter under the laws of Mississippi, the name of Southern Railway Company in Mississippi has been changed to Columbus & Greenville Railroad Company, and that hereafter the operations of this company will be carried on in the latter name under the supervision of the same officers who have heretofore been in charge.

DENVER & RIO GRANDE.—Application by the stockholders for a 60-day postponement of the sale of this road, set for November 20, was denied by Judges W. H. Sanborn of St. Paul and R. E. Lewis of Denver in the federal court at Omaha, Neb., on November 16. An appeal will be taken, which will not, however, act as a stay to the sale.

See Denver & Rio Grande Western.

DENVER & RIO GRANDE WESTERN.—A Delaware charter was granted to this company on November 15, with an authorized capital of \$150,000,000, for the purpose of taking over the Denver & Rio Grande, which is scheduled to be sold at Denver on November 20.

ELECTRIC SHORT LINE.—The Interstate Commerce Commission has denied this company's application for a loan from the government of \$42,250 for equipment and additions and betterments, on the ground that, its prospective earning power being doubtful, the security offered is inadequate.

ERIE.—The Interstate Commerce Commission has approved a loan of \$1,840,700 to this company to aid it in reconstructing freight train equipment, in making improvements to existing equipment and in making additions and betterments to its roadway and structures at an estimated total cost of \$6,680,000. The company itself is required to finance about \$4,840,000 to meet the loan of the government.

EVANSVILLE, INDIANAPOLIS & TERRE HAUTE.—This company has applied to the Interstate Commerce Commission for a certificate authorizing the acquisition and operation of the railroad formerly known as the Evansville & Indianapolis, which was sold at foreclosure on June 3, 1920.

FEDERAL VALLEY.—This company has applied to the Interstate Commerce Commission for authority to issue \$27,940 of 7 per cent notes for 18 months to the Lima Locomotive Works for one locomotive and one caboose.

GULF, MOBILE & NORTHERN.—The Interstate Commerce Commission has approved a loan of \$515,000 to this company to aid in providing itself with six freight and switching locomotives at an estimated total cost of \$227,400, and additions and betterments to existing equipment and to way and structures at an estimated total cost of \$401,500. The company is required to finance about \$114,000 to meet the loan of the government. This company has been authorized by the Interstate Commerce Commission to issue \$4,000,000 of first mortgage 6 per cent gold bonds dated October 1, 1920, and maturing October 1, 1950; to pledge and repledge \$816,000 thereof as security for promissory notes to be given in renewal of certain outstanding bank loans; to pledge \$1,030,000 with the Secretary of the Treasury as security for a loan of \$515,000 from the United States; to pledge \$960,000 thereof as security for an indebtedness of \$480,000 to be funded by the director general of railroads, and to hold \$1,194,000 in the treasury to be pledged from time to time to secure short term notes.

MAXTON, ALMA & SOUTHBOUND.—The Interstate Commerce Commission has denied this company's application for a government loan of \$63,548 for the purchase of leased rail from the Seaboard Air Line and to meet short term notes, on the ground that "the public necessity for the railroad is relatively small" and that the security offered is inadequate because of the doubtful prospective earning power of the company.

MOORE HAVEN & CLEWISTON.—This company has applied to the Interstate Commerce Commission for authority to issue \$50,000 of first mortgage 40 year, 6 per cent gold bonds, the proceeds of which, in connection with the proceeds of an issue of \$50,000 of stock, are to be used in the construction and equipment of its line now under construction from a point at or near Moore Haven, Fla., to Clewiston, a distance of 13 miles. A. C. Clewis has agreed to buy the bonds.

NEW YORK, NEW HAVEN & HARTFORD.—The Interstate Commerce Commission has approved a loan of \$9,630,000 to this company to aid the carrier in providing itself with equipment and additions and betterments to way and structures at a total estimated cost of \$13,525,000.

ORANGEBURG RAILWAY.—The receiver has applied to the Interstate Commerce Commission for a certificate authorizing the abandonment of this company's line, which extends from North, S. C., to Orangeburg, S. C.

PITTSBURGH & WEST VIRGINIA.—At a meeting in Pittsburgh on November 15 the stockholders approved the proposal for the purchase of the West Side Belt Railroad. For this purpose the stockholders also voted to increase the capital stock of the Pittsburgh & West Virginia from \$39,600,000 to \$47,000,000. Of the increased stock, \$3,000,000 will be in preferred shares, which ultimately will be turned into the treasury of the company.

PITTSBURGH, SHAWMUT & NORTHERN.—On November 6, 1920, under court orders, Henry S. Hastings, formerly comptroller and auditor of this road, was appointed co-receiver with Franklin Sullivan Smith.

RUTLAND.—The Interstate Commerce Commission on November 4 approved a loan to this company of \$61,000, to aid the carrier in making additions and betterments to way and structures at an estimated cost of approximately \$89,000. The company itself is required to finance about \$28,000.

SOUTHERN RAILWAY IN MISSISSIPPI.—See Columbus & Greenville.

VALDOSTA, MOULTRIE & WESTERN.—Robert Murray was appointed receiver on November 5. The road operates between Valdosta, Ga., and Moultrie, 42 miles.

WEST SIDE BELT.—See Pittsburgh & West Virginia.

THE BEDROCK OF RAILROAD EFFICIENCY does not mean merely transporting freight and passengers safely and on time; it means getting the railroad work done by the fewest possible workers, with the largest possible production at the lowest possible cost. Anywhere and everywhere bedrock efficiency begins with the man who wants to work and does work.—*N. Y. Herald.*

Railway Officers

Executive

F. S. Wynn, secretary and treasurer of the Southern, with headquarters at New York, has been elected vice-president, with headquarters at Washington, D. C., effective November 11.

H. S. Hastings, comptroller and auditor of the Pittsburgh, Shawmut & Northern, has been appointed co-receiver to act with F. S. Smith, with headquarters at St. Mary's, Pa., effective November 6.

P. C. Byrne, general superintendent of the Alabama & North Western, with headquarters at Pine Hill, Ala., has been elected vice-president and general manager, with the same headquarters, effective November 11.

R. M. Dozier, whose election as president of the Union Railway Company of Memphis, Tenn., was announced in the *Railway Age* of October 29 (page 775), was born at Columbus, Ga., on January 24, 1880. He entered railway service in September, 1896, as a clerk and stenographer on the Southern. In March, 1900, he was appointed general agent of the Southern, with headquarters at New York, but in a few months he was made secretary to the assistant freight traffic manager and served in this position, first with headquarters at Louisville, Ky., then at Washington, D. C., until October, 1903, when he became secretary to J. A. Culp, vice-president of the Southern, with headquarters at Washington. In March, 1905, Mr. Dozier left the service of the Southern to become secretary to C. S. Clarke, vice-president of the Missouri Pacific at St. Louis. In September, 1908, he was appointed commercial agent of the Missouri Pacific at Memphis, Tenn., a position which he held until January 21, 1916, when another promotion made him assistant general freight agent of the Missouri Pacific, with headquarters at Omaha, Neb. In October, 1917, Mr. Dozier was transferred to Memphis, where he remained until September, 1918, when he was appointed traffic assistant by the United States Railroad Administration and sent to Washington. When the roads were returned to private control Mr. Dozier was reappointed to his former position as assistant freight traffic manager, but was transferred to new headquarters at Chicago. He was serving in this position at the time of his recent election.

Financial, Legal and Accounting

P. B. McBride has been appointed auditor for the receivers of the Pittsburgh, Shawmut & Northern, with headquarters at St. Mary's, Pa., effective November 8.

R. H. M. Temple, general solicitor and general claim agent of the Western lines of the Canadian National, with headquarters at Winnipeg, Man., has had his jurisdiction extended over the Grand Trunk Pacific.

C. E. A. McCarthy, assistant secretary of the Southern, with headquarters at New York, has been appointed secretary, with the same headquarters. **E. F. Parham**, who was assistant treasurer before federal control, and who has since been local treasurer, with headquarters at Washington, D. C., has been appointed treasurer, with the same headquarters. **Maury Middleton**, who was cashier at Washington, D. C., before federal control, and who was assistant federal treasurer under federal control, has been appointed assistant treasurer, with headquarters at Washington, D. C.

Operating

M. J. Crotty, assistant superintendent of the Missouri Pacific, with headquarters at Osawatimie, Kan., has been appointed acting superintendent of the Joplin division, with headquarters at Nevada, Mo., effective November 9, succeeding

ing W. C. Bevington, absent temporarily because of illness. **C. H. Dunaway** succeeds Mr. Crotty as assistant superintendent at Osawatimie.

B. H. Knapp has been appointed train master of the Missouri Pacific, with headquarters at Jefferson City, Mo., effective November 9.

Fred Grundler has been appointed assistant superintendent of the New York Central, with headquarters at Cleveland, Ohio, succeeding T. Brennan, transferred, effective October 9.

C. O. Congdon, division engineer of the Missouri Pacific, with headquarters at Osawatimie, Kan., has been appointed trainmaster, with headquarters at Council Grove, Kan., effective November 9.

J. A. Houston, trainmaster on the Dakota division of the Chicago, Rock Island & Pacific, has resigned to enter the engineering department of the Westinghouse Electric Manufacturing Company.

J. A. Caviezel, general superintendent of the Alabama, Tennessee & Northern, with headquarters at Mobile, Ala., has been appointed assistant general manager, with the same headquarters, effective November 10.

F. J. Taylor, assistant chief despatcher on the Chicago, St. Paul, Minneapolis & Omaha, has been promoted to chief despatcher, with headquarters at Omaha, Nebr., effective October 1, succeeding W. B. Fordyce, who has retired.

J. P. Leach has been appointed superintendent of the Central Zone of the Pullman Company, with jurisdiction over the Chicago, St. Paul, Minneapolis and Omaha districts, with headquarters at Chicago. The appointment is effective November 15.

P. J. Coleman, acting assistant superintendent of transportation of the Northern Pacific, with headquarters at St. Paul, Minn., has been reappointed trainmaster of the Dakota division, with headquarters at Jamestown, N. D., effective November 1.

F. G. Gurley has been appointed superintendent of the Wymore division of the Chicago, Burlington & Quincy, with headquarters at Wymore, Neb., succeeding **M. F. McLaren**, who has been transferred to the McCook division, with headquarters at McCook, Neb., succeeding E. E. Young, who has resigned.

D. R. Campbell, general superintendent of the Pacific division of the Canadian National, with headquarters at Vancouver, B. C., has been given jurisdiction over the construction department of the Western lines, with headquarters at Winnipeg, Man. The office of general superintendent of the Pacific division has been abolished.

J. C. Goodfellow, trainmaster of the Los Angeles division of the Southern Pacific, with headquarters at Indio, Cal., has been appointed terminal trainmaster at Los Angeles, succeeding **W. H. Jones**, who has been transferred as trainmaster of the Los Angeles division, with headquarters at Los Angeles. **V. S. Burnham**, trainmaster of the Los Angeles division, with headquarters at Los Angeles, has been transferred to Indio to succeed Mr. Goodfellow. These changes are effective November 1.

Coincident with the reorganization of the safety department of the Union Pacific, promotions and appointments have been announced as follows: **P. Groome**, safety agent, with headquarters at Omaha, Neb., has been promoted to general safety agent, with the same headquarters; **J. F. Kenney** has been appointed safety instructor of the Omaha shops, succeeding **C. W. Moats** and **J. Trevaskis**, who have been assigned to other duties; **J. A. Cranor** has been appointed safety inspector of the Denver shops and terminal; **Alfred Rutherglen** has been appointed division safety agent of the Western division, with headquarters at Green River, Wyo.; **L. B. Garey** has been appointed safety agent of the Wyoming division, with headquarters at Cheyenne, Wyo.; **L. A. Abercrombie** has been appointed safety agent of the

Central division in addition to his duties as division safety agent of the Kansas division, with headquarters at Kansas City, Mo.; **F. C. Hunter** has been appointed safety agent of the Colorado division, with headquarters at Denver; **J. M. Guild** has been appointed safety agent of the Nebraska division, with headquarters at Omaha. These appointments were effective October 16.

George J. Shreeve, whose promotion to general superintendent of the Belt Railway of Chicago, Chicago, was announced in the *Railway Age* of October 15 (page 678), was born at Hamilton, Ont., on May 10, 1870, and entered railroad service in 1887, as a fireman on the Wabash. He was promoted to engineman in 1892, but left the Wabash to become an engineman on the Belt Railway of Chicago in 1894. In 1901 he was promoted to traveling engineer, a position which he held until 1904, when he was promoted to general yardmaster. He was appointed trainmaster in 1910, and became superintendent in 1913. On July 1, 1918, Mr. Shreeve was appointed acting general superintendent, succeeding J. H. Brinkerhoff, who had been appointed terminal manager of the Chicago district by the United States Railroad Administration. On March 1, 1920, when the roads were returned to private control, Mr. Shreeve returned to his position as superintendent of the Belt, and was serving in this capacity at the time of his recent promotion.



G. J. Shreeve

Charles F. Martin, whose promotion to superintendent of transportation of the Western lines of the Canadian National, with headquarters at Vancouver, B. C., was announced in the *Railway Age* of September 17 (page 507), was born at Farnham, Que., on July 27, 1886. He entered railway service in October, 1900, as a messenger at the Farnham offices of the Canadian Pacific, and during the next seventeen years served continuously with that road. In October, 1903, he became car checker; he was made a clerk in the mechanical department in July, 1904, and in April, 1906, he became a stenographer. In November, 1908, another promotion brought Mr. Martin to Calgary, Alta., as secretary to the general superintendent. He was stationed at Calgary until April, 1909, when he was transferred to Winnipeg, Man., and made secretary to the general manager, a position which he held until May, 1910, when he became chief clerk to the superintendent, with headquarters at Kenora, Ont. In June, 1912, Mr. Martin was promoted to general yardmaster, with headquarters at Souris, Man., but he withdrew from railroad service in November of that year to engage in private business at Winnipeg. In August, 1915, he returned to railroad work as chief clerk in the car service department of the Canadian National at Winnipeg. At the time of his recent promotion, Mr. Martin was serving as inspector of transportation on the Canadian National, with headquarters at Winnipeg, a position to which he had been promoted in October, 1917.

Traffic

A. C. McKinley has been appointed general agent of the Lake Erie & Western, with headquarters at Chicago, effective November 1.

H. M. Spence has been appointed assistant general baggage agent, with jurisdiction over the Western lines of the Canadian National and Grand Trunk Pacific, with headquarters at Winnipeg, Man.

F. L. Veal has been appointed commercial agent of the Seaboard Air Line, with headquarters at Miami, Fla., effective November 1.

Mechanical

I. W. Hicok, erecting shop foreman on the Chicago & Alton, with headquarters at Bloomington, Ill., has been promoted to superintendent of shops, with the same headquarters, effective November 10, succeeding J. J. Carey. **William Monroe** succeeds Mr. Hicok.

Engineering, Maintenance of Way and Signaling

Paul B. Spencer, assistant engineer of structures of the New York, New Haven & Hartford, has been appointed engineer of structures, effective October 1, succeeding W. H. Moore, deceased. **Floyd J. Pitcher** succeeds Mr. Spencer as assistant engineer.

E. G. Lane, engineer maintenance of way, Western Lines of the Baltimore & Ohio, with headquarters at Cincinnati, Ohio, has been transferred to Baltimore, Md., as engineer maintenance of way, Eastern Lines, succeeding **S. A. Jordan**, who has been transferred to the Western Lines, with headquarters at Cincinnati, Ohio.

W. A. Kennon, division engineer of the Missouri Pacific, with headquarters at St. Louis, Mo., has been transferred to a similar position with headquarters at Osawatimie, Kan. **L. Winship**, assistant engineer, with headquarters at St. Louis, has been appointed division engineer, with headquarters at Nevada, Mo. **J. R. Nagle**, division engineer, with headquarters at Nevada, Mo., has been transferred to a similar position with headquarters at St. Louis. These changes are effective November 9.

Purchasing and Stores

F. S. Hammond, general storekeeper of the Pittsburgh, Shawmut & Northern, has been appointed purchasing agent in addition to his other duties, effective November 8.

B. B. Brain, fuel agent of the Kansas City Southern, with headquarters at Kansas City, Mo., has been appointed purchasing agent, succeeding G. W. Bichmeir, resigned to accept service with another company, effective November 15.

G. H. Walder, assistant purchasing agent of the Chicago, Milwaukee & St. Paul, with headquarters at Chicago, has been promoted to purchasing agent, effective November 14, succeeding **W. A. Linn**, who has been assigned to other duties.

Obituary

John G. Shillinger, chief engineer of the Rutland, died suddenly at Burlington, Vt., on November 12. Mr. Shillinger was born in 1864 and was graduated from Cornell University in 1892. He entered railway service in 1893 with the Cleveland, Cincinnati, Chicago & St. Louis. Subsequently he served as assistant to the engineer of maintenance of way, supervisor of track and engineer of maintenance of way for the same road. In 1912 he was appointed chief engineer of the Rutland, which position he held at the time of his death.

Arthur M. Waitt, a consulting engineer and railway specialist, at one time superintendent of motive power of the New York Central, died November 11, at Sharon, Conn., at the age of sixty-two. Mr. Waitt was born in Boston and was educated at the Massachusetts Institute of Technology. He entered railway service in 1879 with the Chicago, Burlington & Quincy as a draughtsman. Subsequently he served in the same capacity with the Boston & Maine. In 1889 he became assistant manager of the Pullman car works and in 1892 master car builder of the Lake Shore & Michigan Southern. In 1899 he was appointed superintendent of motive power of the New York Central. Since 1905 Mr. Waitt had been a consulting engineer, specializing in railway work. He was a member of the American Society of Mechanical Engineers and the New York Railroad Club.